THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LIV. SATURDAY, MAY 18, 1889. NO. 20.

ORIGINAL LECTURES.

THERAPEUTICS OF THE GOUTY DIATHESIS.

From a Lecture delivered in the Polyclinic Evening Lecture Course, March 12, 1889.

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RECOGNIZING from the facts we have thus far considered, that it is not a disease—not a sudden or a gradual departure from the usually normal action of the organism—that we are dealing with; but that it is, if I may be permitted the expression, an abnormal normality; that is to say, an inherent departure of the individual organism from the typical action of like organisms; we see that our treatment is of necessity directed to permanent conditions, and must be of a permanent character. Our aim then, is not so much to alter the action of imperfectly functionating organs—though this must be, to a certain extent, part of our plan—but so to arrange the materials upon which that action is performed, and so to deal with the resultant products as to obviate the further disturbances of the economy arising from the presence in the circulating medium of irritant or toxic matters, or of matters not directly toxic, but still negatively harmful by their exclusion of others needed to promote proper function, or of matters detrimental to general health, by throwing an added burden upon excretory organs to secure their removal.

Repeating then, that it is not "gout," not the storm of diseased action finding its vent in articular inflammation with febrile reaction, which we are now considering, but the "gouty diathesis," the inherent tendency on the part of certain organisms to depart from the normal type of their kind, in the functions particularly of secretion and excretion, and, to a certain extent, of respiration; a tendency not confined to any one organ or set of organs, but influencing more or less markedly every cell of the body, and, in particular, muscles and blood-making and depurating organs; let us see what are the particular objective points of therapy, and in what manner these can be best secured.

Through the teachings of the greatest biologist of the century, we have come to recognize that life is maintained by a continual adjustment of the parts of the organism to each other, and of the organism as a whole to its environment; and as a corollary that a perfect, harmonious adjustment constitutes health, an imperfect, discordant adjustment constitutes a want of health. If every departure from ordinary action of one organ was met by a compensating departure of other organs, and in such a manner as not to impair the harmony between the whole organism and its environment, then such departures would not constitute disease. It is, therefore, theoretically conceivable that the failures of assimilation and excretion, which we collectively group under the title "gouty diathesis," can be completely harmonized by automatic action of the organism, and be consistent with a state of perfect health. Practically, however, the conditions requiring adjustment are so numerous and so involved that while in a great many instances comparative health is maintained for prolonged periods, sooner or later a variety of disturbances, more or less marked and more or less serious, are brought about; so that it is important to impress upon the patient that the condition, be it what it may, for which he seeks relief, is not a temporary matter to be cured by temporary expedients, but the sign of a profound organic alteration, and as such demanding permanent attention. The first point in therapy then, is to gain the intelligent coöperation of the patient.

We must next endeavor to determine to what extent the organic alteration of tissues and functions has been developed in the individual case before us; and in how far this is removable, and in how far it is a permanent life-condition. This is an extremely difficult problem, and can only be solved by careful study of all the symptoms, the temperament, general physical condition, and, as far as can be learned, the personal and family medical history of the patient. It does not fall within our present limit to discuss this extremely interesting question of therapeutic diagnosis. We must assume that it is determined, and choose a representative case as illustrative of the general course to be pursued; with such modifications in other cases as individual conditions may indicate.

Suppose then, that we have decided—as in a case I now have in mind, and of which I will endeavor, for the sake of a concrete example, to present in brief the salient characteristics—that there is a congenital tendency to the over-production of uric acid and to excessive waste of phosphated tissues—a conjunction extremely common—that can never be entirely overcome; but that the results of this tendency are greatly aggravated by the mode of life of the patient and by his mental characteristics. We have first to remove the removable, remedy the remediable; that is to say, reduce the nervous wear and tear and in general alter our patient's mode of life to harmonize with the impaired structure he has inherited. This being done, we must endeavor to secure prompt elimination of the excess of uric acid, whose formation we cannot altogether prevent, and also to check the excessive waste of phosphates and repair their loss.

The patient is an attorney in active practice, of middle age and of nervo-sanguine temperament. A hard student, he takes but little physical exercise—perhaps walks to his office in the morning, if he rises early enough—but is, as a rule, a late riser, because he always goes late to bed. His breakfast, he says, is "light," because he has little appetite in the morning; but the dish of oatmeal, or some porridge equally difficult of digestion, is always eaten. His luncheon at a restaurant is in reality a more than sufficient dinner. It is eaten none too

leisurely, and immediately thereafter he rushes back to his business. In the evening his dinner at home is an elaborate meal, to which a sufficient time is devoted; after which, however, he feels heavy and oppressed. Nevertheless, he will frequently devote his night, sometimes into the small hours, to reading and writing; or if he has gone to the theatre or some social affair, take up his books and papers on returning home.

At breakfast, then, this man eats too little, at luncheon and dinner a great deal too much, his physical exercise is insufficient, his mental exertions too great. In addition, the character of his food is entirely unsuited both to his inherited constitution—his father was the subject of gout—and to his mode of life. He does not need much animal food, for he makes little demand upon his own muscular apparatus; and while we cannot hold strictly to Liebig's classification of foods into tissue-formers and heat-producers, there can be little doubt that nitrogenous foods, as a rule, are devoted to tissue-formation and to the furnishing of those explosive compounds by which muscular activity can be suddenly liberated in response to nervous impulse. It is also true, within certain limits, that nitrogenous foods increase the formation of urea and uric acid, a tendency we desire to restrict and modify.

Yet meats of various kinds form absolutely the greater part of our patient's diet. Furthermore, his inactive life does not make very great demands for heat as a source of mechanical action. Beyond that necessary to supply the force required to keep up the functions of organic life, and a little extra demand for increased cerebral circulation, he needs no particular store of heat-producing elements. Of the carbohydrates, besides, sugar is a direct excitant of uric acid formation; therefore, this must be cut off entirely, and the starches easily converted into sugars reduced to a minimum. On the other hand, the great waste of phosphates, due to congenital tendency and to excessive nervous action, needs repair, and a sufficient amount of fat, of hydrocarbons, must be taken to enable the economy properly to perform its functions with the least possible expenditure and friction. The fat is useful not only as a heat-producer, but in another way. It would, of course, be an extremely crude and inaccurate view of nerve-tissue formation to represent it as a mixing of phosphates and fat—yet nerve tissue is largely phosphorized fat, and by whatever processes of metabolism its structure is built up, consumed, and renewed, I am sure, from clinical observation in just such cases as the one in point, that fats and phosphatic foods do assist in giving it proper tone and diminishing its waste. The good effects of cod-liver oil and of the hypophosphites in improving the nutrition of phthisis, must be in great measure attributable to improvement of the trophic nervous system.

But there are, in addition, other and more easily demonstrable reasons for diminishing the amount both of meat and of sugar and starchy foods, than those already suggested.

The vertigo, the disturbances of vision, the headache, the inability to concentrate attention upon his work, the throbbings, the pains here, there, and elsewhere, the disturbance of the heart rhythm, the condition he terms "torpidity of liver," for which the patient seeks relief—that condition, in a word, which tortures the patient with dread of impending mental failure, and which by physicians is so often carelessly mistermed "neurasthenia"—is to be ascribed not alone to the overloading of the circulation with uric acid, but also to direct and indirect impoverishment of the blood, from faulty assimilation due to failure of digestion. Too great a demand is made upon the digestive apparatus, and the energies that should be directed to other work are called upon to prepare an amount of food far beyond that necessary for purposes of force-production or tissue-building. The work is not done properly; and, as a consequence, the system suffers both from lack of the products of perfect digestion and from overplus of the products of imperfect digestion. Therefore, we must diminish the absolute quantity of food consumed, and must so regulate its quality as to produce the greatest amount of force with the least possible expenditure.

We must, in addition, cut off those elements which, if undigested, are liable to undergo acid fermentation, thus increasing uric acid production. It is a mistake, I think, except in the worst cases, to interdict meat completely. We can allow one kind of meat at one meal, daily; giving the preference to "white meats," but not absolutely excluding butchers' meat. We must insist upon proper cooking—that is, broiling, roasting, or boiling; not too "well done" in the former methods, and not "done to rags" in the latter. Fish can often take the place of meat with advantage. Bread must not be used in excess, and gluten bread, or that made from the whole wheat and retaining the phosphates, is preferable to our ordinary white bread. Pastries and sweets are to be forbidden. Potatoes, turnips, cabbages, and similar starchy vegetables should be cut down to the lowest point, or, better, avoided altogether. Rice, well cooked, may be allowed in moderation. Green vegetables, lettuce, celery, cresses, spinach, asparagus, and the like, may be partaken of judiciously, unless any one of them should give rise to unpleasant symptoms—so, too, the legumens, peas, beans, lentils; preferably in the form of *purée*.

Fruits, if not too acid, may be used freely. If any particular fruit is found to cause indigestion, or to give rise to gouty manifestations, it should be interdicted. Patients are often markedly idiosyncratic in the matter of fruits, and it is impossible to lay down exact rules.

Fat, in the form of butter, cream, oil, or meat fat, should be used in moderate amount. Even in the obese, as Ebstein has more particularly insisted upon, it is a mistake to cut off fats entirely. The quantity must be governed by circumstances; the amount of work done by the patient and the extent to which we are substituting hydrocarbon for carbohydrates must be considered and the results observed. Some careful experiments by Ebstein show that, up to 120 grammes of butter daily, the amount of uric acid excreted by a healthy man was rather diminished than increased by the consumption of fat.

Fluids, and especially water, should be used freely. To speak first of nutritive fluids, milk should be substituted for meat to some extent, and, perhaps, as some claim, absolutely in the worst cases, though personally I have not found it necessary to insist upon entire abstinence from flesh. The so-called "milk-cure" of gout is a delusion and a snare. An exclusive milk diet will harm rather than benefit our lithæmic patients. It is important in these and all other cases that milk be properly used. It must not be gulped hastily, ice-cold, to

check digestion and to coagulate into a great tough curd requiring hours for resolution. Sipped slowly, so as to form minute coagula through which the digestive juices can readily penetrate; and, preferably lukewarm, so as not to lower digestive temperature, the fancied "disagreement" of milk with many patients will not be manifested. From one pint to three pints daily may be taken according to the quantity of other foods permitted. Soups, if not too thick—that is to say, *bouillon* rather than "stock"—should always precede at the principal meal of the day. Like the beef-tea of the sick-room, this is rather a gentle stimulant to the peptic glands than an aliment, and it furnishes also a quantity of warm fluid to help the solution of other aliments. It is almost unnecessary to say that cold water must not be taken with meals. The use of hot water at meals if must be, but preferably an hour before meals, is of signal advantage in gouty dyspepsia.

While excess is injurious, even in the use of water, and while it is beyond question a mistake constantly to overload the vessels, yet a certain amount of flushing at intervals gets rid of noxious accumulations and gently stimulates the kidneys, the skin, and the intestinal glands and mucous membrane to the work of excretion, which it also facilitates by suspension or solution of the offending matters. It reduces in this way the danger of calculous concretions. I am sure that much of the benefit from certain vaunted mineral waters is due as much to the H_2O as to the salts held in solution. The same thing may be said of certain medicinal infusions and decoctions—the real "active principle" is hydrogen monoxide.

When we cannot induce patients to drink water, or when the ordinary drinking-water of the locality is noxious, we can then appropriately order some alkaline spring-water. And this brings us to the question of the administration of alkaline remedies. I can only reëcho the advice of Ebstein—they are to be "used, not abused." Even moderate doses of alkalies are badly borne by some patients; and some require the concurrent administration of a ferruginous or bitter tonic. Carbonates, acetates, citrates—that is to say, salts of vegetable acids—should be employed. Lithium has a preëminent reputation, but I cannot say that it is altogether deserved. I think I have seen equally good results from potassium salts; but ammonium and sodium salts, especially the latter, should, as a rule, be avoided, as having a certain tendency to produce insoluble compounds. Very often it may be found that a combination of two alkalies—for instance, lithium citrate, say ten to fifteen grains dissolved in *liquor potassii citratis*, say two fluidrachms—will give better results than either salt singly.

I have not observed better results from lithium-sodium-benzoate than from lithium and potassium citrates or the potassium carbonates. Potassium acetate, as a rule, does not seem to be equal to the other vegetable-acid salts, though it is an extremely difficult matter to decide positively between the various alkaline medicaments. Lithium salicylate is often of decided benefit, especially where vague myalgia, so-called "muscular rheumatism," has been present. Probably better results are to be obtained by varying the particular drug employed than by constant use of any one salt or of the salts of any one base. I have not seen any great benefit from colchicum in the gouty diathesis, though its value in acute gout cannot be denied.

There are other points in the medicinal treatment which may be more appropriately taken up after a few further matters connected with the regimen of our patient have been considered. He drinks "moderately." But even "moderate drinking" is an excess for a person of gouty inheritance. If possible, we must cut off alcohol entirely. If necessary, the change may be gradual. Malt liquors and sweet wines must be absolutely prohibited in any event. The least injurious alcoholic beverages in these cases are spirits (whiskey, brandy, or gin), and light dry or sour wines.

Exercise, appropriate in its quality and quantity, must be, not vaguely advised, but definitely prescribed. In the prescription of exercise careful judgment is necessary. We must consider not only the patient's physique, but also his occupation, means, and surroundings, and endeavor to give advice capable of practical application, with the least disarrangement to his affairs. Where time and purse permit, horseback exercise, in moderation, is probably best of all. Bicycle or tricycle riding will sometimes answer as well, and is, indeed, an admirable exercise. Open-air walking is within reach of all. In all these the patient, if unused to active exercise, must begin with very little exertion and gradually increase. Where a long and thorough rest can be had after exercise, and where the skin, intestines, and kidneys are in vigorous function, it is well to push it to the point of fatigue; but in the majority of cases it is better to stop short of that point. I have, however, seen excellent results from fatiguing exercise persisted in daily, at intervals, for short periods, a week or ten days at a time.

The use of dumb-bells and other calisthenic measures at home is inferior to open-air walking or riding, but may be associated with the out-door exercise.

As to the matter of baths, opinions differ greatly. Cold bathing is lauded by some, and condemned by others. In this, as in many other instances of disagreements as to therapeutic measures, the fault lies in exclusive regard being paid to the two extremes of a problem, disregarding the very important connecting mean. In other words, we have to consider not an abstract pathological condition or complexus and an abstract remedial action, from which factors we may, as in pure mathematics, deduce an equally abstract and theoretically exact conclusion; but we must also consider the very concrete patient in whom the pathological condition is present, upon whom the remedial action is to be exercised and in whom the result is to be practically manifested. Empirical observation, guided by rational forecast, must then be the determining factor of the problem. In the patients of sanguine, or nervo-sanguine, or even bilious-sanguine temperament, whose robust condition leads us to expect prompt reaction from cold bathing, it may be judiciously advised; and if it produces an agreeable glow with a general feeling of exhilaration, should be continued. On the other hand, it will probably be injudicious in weak or run-down persons, or in those of lymphatic or bilious temperament; and in any case in which it fails to produce an agreeable and stimulating reaction, should not be practised. It is important, however, in all cases to keep the skin in active function. Where cold bathing is ill-advised, lukewarm baths should be frequently taken, and Turkish or Russian baths, if well borne, at intervals of three or four weeks or more, according to indications.

The intestinal functions must also be kept at a proper pitch of activity, not alone that digestion may be properly performed, but that auto-intoxication with leucomaines may not assist the general depressing influences. An occasional saline laxative, Rochelle salts preferably, may be used in case the mineral water habitually or occasionally employed is devoid of mild purgative effect. In some cases, especially where the liver is markedly at fault, probably in a condition of venous congestion, with more or less catarrh of the bile ducts, the acid phosphate of sodium, with an occasional mercurial, will be found to serve a good purpose. Habitual use of active saline or other cathartics, or drastic purgation at any time, is to be deprecated. If there is intestinal atony, or lack of secretion, the remedies usually employed for these conditions, nux vomica, belladonna, rhubarb, euonymin, and the like, may be resorted to in appropriate combinations.

One other remedy, or class of remedies, addressed to the general condition should not be forgotten. At first sight it would appear to be theoretically contraindicated, but at all events there is agreement as to its good effect empirically; and hence there can be no sound theoretic objection. The fault lies in any theory which fails to agree with good practice. This class of remedies is that of the mineral acids, preferably phosphoric or nitric acid; given well diluted in small doses, just before or during meals. While I cannot agree with the opinion that nitric acid, for example, is a direct oxidizer, and while the actual amount of oxygen that could be liberated from the few drops of nitric acid taken into the system would be in itself of no value, yet I have no doubt from clinical observation that this agent not only assists digestive action, but really does, in whatever way, chemical or dynamical, stimulate general oxidizing processes. It may be like the first push to a row of bricks that causes all to topple—initiatory of general oxidation. Surprising improvement often results from its use in so-called neurasthenic patients—in reality the dyspeptic subjects of the gouty diathesis. The inhalation of oxygen would seem to be theoretically indicated. As a rule, a healthy man in moderate physical activity inhales in the air more oxygen than his blood can appropriate. Nevertheless, in some conditions of ill-health, and in the gouty diathesis especially, the occasional filling of the pulmonary cavity with pure oxygen seems to induce greater absorptive activity, whether mechanically or chemically I cannot state. This measure, or the inhalation of compressed air, may then be appropriately employed at times, though such methods can never replace open-air exercise and should not be allowed entirely to substitute the latter.

In the particular case which has served as a thread upon which to string our therapeutic observations, the following treatment was pursued. It will be remembered that the prominent symptoms were vertigo, headache, and confusion of ideas. A large dose of Rochelle salts was ordered for immediate effect, and free purgation with smaller doses continued for a few days, when a pill of euonymin and nux vomica was substituted. For disciplinary purposes, a strict diet of skimmed milk was instituted, the other allowable foods being gradually added. Thus the patient was led to regard as a liberal diet, that against which he would in the first instance have rebelled. As much rest from business as pressing affairs would permit was recommended, and the time thus gained devoted to moderate open-air exercise, walking, and riding.

Warm Carlsbad water slowly sipped before breakfast and before dinner, and the mixture of potassium and lithium citrates three times daily, between meals, was prescribed at first; and with the disappearance of the brick-dust sediment from the urine, dilute phosphoric acid at meals was substituted for the mixed alkalies. The habitual use of the Carlsbad water was recommended. Cool bathing, sea bathing, and occasional Turkish baths were prescribed, at appropriate seasons. Improvement was rapid, and the patient will probably be comfortable as long as he obeys orders.

ORIGINAL ARTICLES.

APOSTOLI'S METHOD OF TREATMENT OF UTERINE FIBROIDS.[1]

BY HORATIO R. BIGELOW, M.D.

THE name of Apostoli will always be associated in the minds of gynecologists with a plan of treatment which he, more than all others, has elaborated, differentiated, and systematized. From an examination of the many and varied diseases which seek surcease from suffering at his hands, lessons have been learned which must bear fruit as the ages go and come. Others will take up the work, and round it out; others may improve upon it, may clear up some of the doubtful points that now surround it; others will add to it wealth of clinical detail, but the glory of it will be Apostoli's long after time has put an end to unfriendly criticism or to personal rancor—and when his name, too, shall be added to those who have created new eras in scientific progress.

The manner of this paper has been a subject of some concern to me. It was a serious question whether I should enter into a discussion of the salient physical and physiological laws that modern investigation has made familiar to most students—whether or not it were better to consider the tributes of theorists upon points which the infancy of electrical science has not had time to substantiate, and a consideration of which would involve much empty speculation; or whether to write in homely fashion of ways, means, and facts, in such wise as to be instructive and convincing. I have chosen the latter, simply premising that he who seeks to do a perfect work in this department must acquaint himself, and that right well, with the great underlying principles of the physical laws of electricity, and of these in relation to their physiological bearings, and that he should have some personal acquaintance with the *feel* and *results* of the different currents in different parts of the body.

I shall have a word to say upon the armamentarium, for no man can wage a successful combat with faulty weapons—then shall ask the reader to go over with

[1] Communicated to the Obstetrical Society of Philadelphia.

me questions of chemical action, of constancy, of tension, and of inter-polar action, and finally we will discuss together the methods of application and the clinical facts demonstrated at Apostoli's clinic.

The armamentarium. — A galvanic battery, a faradic battery, a collector, a galvanometer, intra-uterine electrodes for both currents, and one for carrying both the positive and negative of the induced current within the uterus. Bulbous charcoal-pointed electrodes of various sizes for galvano-caustic applications; intra-uterine platinum electrodes, and large bulbous vaginal and rectal electrodes. The belly plate can be made of potter's clay, in which the metal plate is buried—or better, perhaps, is the plate devised by Martin, of Chicago.

The galvanic battery. A good battery must have—

1. A slight chemical action.
2. Great constancy.

It is well to remember that the *quantity* of electricity is not synonymous with *tension.* With a pile of great chemical action we have always burning pain and lesions of the skin. A number of elements united does not give a larger quantity of electricity than one element, but it gives a *tension* capable of overcoming resistance and of accomplishing results which a single element could not do. Therefore we seek a battery which will generate a current of sufficient *tension* to overcome the obstacle. A battery too, in which the chemical action is great, is expensive, because of the degeneration of material, and it is not reliable in constancy. A perfect pile is one in which—

1. The evolution of gas is avoided.
2. In which there shall be the slightest possible chemical change of the liquids of the battery.
3. In which the metal plates shall not be changed by the deposit of the chemical action.

Constancy, which is the most important consideration for the doctor, can be had by using a rheostat, but as this is expensive and necessitates a great number of elements, it is better to select a battery with a constant pile.

The Leclanché cell. The current is here generated by the action of the chlor-hydrate of ammonium upon charcoal and the peroxide of manganese. These cells have grown to be very popular, and they will give a constant current when in use for 120 to 130 hours, without being recharged. But I do not quite like the combination, since the chemical action is always considerable.

The Danieil element. This is formed of two metals and two liquids: zinc and copper, and water acidulated with sulphuric acid, and a solution of the sulphate of copper. This pile, or the same modified by Dr. Onimus, is one of the very best. It has great constancy and small chemical action. The batteries of the bisulphate or protosulphate of mercury are not useful because of the great chemical action. M. Gaiffé makes an excellent battery of the chloride of silver, which is valuable since it can be used several months. It may be added, however, that after six months of use the elements are destroyed.

The Leclanché cells, or those of Daniell, are probably the best. With 36 Leclanché cells one ought to get a strength of 300 to 350 milliampères. If a rheostat is used, a much larger number of cells will be required, because the greater the resistance the greater must be the tension. This entails large extra expense and is really not necessary with the sulphate of copper battery.

The collector. This keyboard arrangement is invaluable; for, with one hand holding the electrode in place, the operator can at will bring into the circuit any number of couples desired; he can change the current at will, or can produce voltaic shocks.

The galvanometer. To measure the dosage exactly is an absolute prerequisite of success. The one of which I know most is that made by Gaiffé, and of which the recorded error is only 2 or 3 per cent. Apostoli gives the following records: *Edelmann's* galvanometer without "shunt" fails to the amount of 7.5 per cent.; with "shunt" the defect increases to 20 per cent. It registered $\frac{163}{1000}$ ampère, instead of $\frac{200}{1000}$ ampère. *Waite's* is equally unreliable. The constants are:

Without shunt .	error	6 per cent. at least.
With shunt	10–32	" " "
With shunt	100–25	" " "

The faradic battery. Duchenne, of Boulogne, pointed out the difference in action between the current of the first helix (extra current) and that of the second helix (the induced current). These points were disputed by Becquerel, who claimed that the physiological differences were due to physical differences, and that currents of the same *intensity, tension,* and *duration* produced the same effects. The current of the second helix, which is made of long, thin wire, will, of course, give a greater tension than that of the first helix, which is of short and thick wire. Onimus claims that, when the tension is the same, the extra current (first helix) operates more appreciably upon the sensibility of muscles and upon the excitability of certain organs. For the uses of the gynecologist, especially within the uterus, the induced current of high tension from the long, thin wire will be the one generally used. The little well-known portable battery of Gaiffé, with a chloride of silver pile, is excellent and answers every purpose. It has also the merit of being cheap. This consists of two elements contained in one partition of a small box of gutta percha. The vibrator can be entered or withdrawn by means of a handle. A

band of copper, elastic and connected with this, permits a just regulation of the currents. A graduated tube penetrates between the central barrier of soft iron and the inductive bobbin, so that by withdrawing it or pushing it in we get a greater or less intensity of current. Two interruptions per second, I have found, were tolerated without discomfort, but the pain increases with the number of the interruptions.

The therapeutics of the induced and of the continuous currents.—"The induced current penetrates the tissue profoundly by reason of its high tension, but, contrary to physical laws, the continuous current of low tension has a larger and more profound action. We have proved the diffusion of the electric currents, and that the galvanic current propels itself through organic tissues, its influence being felt at remote points; the current *never remains limited between the two poles.*" (Onimus.) "If we now consider the differences that exist between continuous and induced currents during their *constant* passage, we find that it is not difficult to distinguish between them, as the line of demarcation is clear. The induced current acts for an exceedingly short time during its passage. It produces at each instant of passage a greater or less excitation, and causes molecular shock. The induced current acts mechanically as an excitant, but the continuous current penetrates more gradually the tissues, but more profoundly, acting chemically in such a way as to produce molecular orientation and chemical combinations." (Onimus.)

The induced current traversing the liquid, semi-liquid, or solid substances that go to form the human body, produces no chemical action whatever—simply a mechanical molecular disturbance. The continuous current, however, not only produces its chemical action at the poles, but this molecular disintegration and orientation are propagated throughout the zone between the poles. This question has excited much discussion recently before the British Gynecological Society, and many letters have appeared in the pages of the *British Medical Journal* upon the same subject; Dr. Bantock and others who are opposed to the results of the Apostoli method, believing them to be grossly exaggerated, but who, also, it is easy to see, have given the subject but superficial study, claiming that the action of the galvanic currents was simply at the poles, that some little effect was produced in the uterine fibres, causing them to contract, and that this contraction might be the reason of the apparent diminution of the tumor; but in a most illogical way proceeded to argue that the continuous current passed through a fibroid removed from the body would have no effect whatever. They believed that tumors were never diminished or dissipated, etc.; all of which was mere argument, since the fact is as proven as any fact of record, that fibroids are diminished, and that the action of the current is not limited to the poles. When such men as Sir Spencer Wells, Keith (father and son), Rutherford, Simpson, and others, who have done as magnificent surgical work as any surgeon living; when Martin, Engelmann, and Woodham Webb, all state that they have diminished and even dissipated such tumors by this plan; when reports from Italy and Spain confirm the same, by detailing results equally good, and when we add to this the record of thirty others who have reported similar cases, all men of unimpeachable honor and highly esteemed in the profession, the puerility of the arguments cited becomes very apparent.

Just what the galvano-caustic action is that dissipates a tumor is not yet determined. Whether it coagulates the albuminoids, or creates interstitial inflammation, I do not know. It *does reduce the tumor*, and it remains for us to find out the *why*. I believe, however, that time will demonstrate a change of *cell-life* in addition to the purely chemical action which takes place around the poles. To quote it at length would consume overmuch time, but one may read with much profit Dr. Apostoli's paper, which was read at the British Medical Association, at the Glasgow meeting, August, 1888, on "Some Novelties in my Electrical Treatment of Uterine Fibroids, with Answers to Objections." In his clinic in Paris the induced current is not often used. It has a wondrous effect, however, upon the ovarian pain in hysterical women. Both the + and the — poles are carried to the fundus through an insulated sound, at the base of which is a square cap for the attachment of the wires. I have seen now twenty cases of this kind, and every woman received immediate benefit after a séance of ten or fifteen minutes

Uterine fibroids.—In no clinic upon the continent have I had such large opportunities for studying and examining uterine fibroids. The number of women is always large, presenting every variety of shape, position and size of tumor. Each case is regularly entered upon the record book, together with exact measurements of the tumor and the diagnosis, all of which may be confirmed by the medical gentlemen present. If the case is one of unusual interest, a plaster cast is made of the woman's abdomen. After each treatment the measurements are again taken and noted. The record of each case is open to the free investigation of anyone, and anyone may question the patients, examine or measure them. Everything done here is frank, honest, and above-board. There is no secret about it—statistics are not garbled, or manufactured to defend a theory. I have seen a large number of bleeding fibroids—some very bad, indeed—but I have yet to see my first case that failed to respond immediately to the continuous current, the positive pole being within the uterus. The strength of the current will vary with the amount of resistance and tolerance, some women bear large doses without inconvenience. I have seen Apostoli carry the current quite often up to 350 milliampères without any discomfort to the

patient. If the tumor be hard, and if the plate on the abdomen be large and fit snugly, I can see no reason why a current could not be increased to 500 milliampères or more without risk, though such an amount can rarely be demanded.

In arresting a hemorrhage it is most important that every part of the lining membrane of the uterus should be treated—and that the bulbous-pointed electrode should be large enough to fit tightly, so as to embrace all surfaces. No hemorrhage, however severe it may be, will resist this treatment if rightly carried out. Now I would put the question squarely and fairly: If Tait's operation, so called, was devised solely for the purpose of arresting the hemorrhage of a bleeding fibroid, and if this operation is attended with danger, is it not immeasurably better to resort to a method which is unattended with any risk of life, which is immediate, and which entails no mutilation?

The records of Apostoli's method are quite as reliable as those of any laparotomist, and I have not seen or heard of a case of failure. I remember the case of Mme. Richard, and so will the many gentlemen who worked with me at Apostoli's clinic. She had a large bleeding fibroid; had to be carried up stairs; weak, feeble, and blanched. Two applications arrested the hemorrhage entirely, and now under continued application the tumor shows signs of diminution. Two other cases come to me now, one sent by Dr. Péan and the other by Dr. Labbé, both cured of the hemorrhage, and in each the tumor is diminishing. The assistant of Dr. Simpson, Dr. Wright; the assistant of Dr. Slavanjsky, of St. Petersburg, Dr. Massin; Dr. Matos, of Barcelona; Dr. Hall, of Baltimore; Dr. Hobart, of Boston; Dr. Smith, of the U. S. Navy, all of them watched these cases with me. We will go a step farther. The continuous current will arrest the hemorrhage. I affirm also that it will very appreciably diminish the size of the tumor.

A very notable case is that of Mme. Lejeune, who had a large, lobulated fibroid, reaching two fingers' breadth above the umbilicus, and reaching down in the iliac fossa of the left side. She was the directress of a large public school, but for some time was unable to attend to her duties. After five *galvano-punctures* she resumed her duties, and the tumor can be well limited now to a distance midway between the symphysis pubis and the umbilicus. It is also much softer. In six other women the reduction of size is most considerable, and in one the tumor is only barely perceptible. Plaster casts of these women are to be seen at the clinic.

The punctures are made with a lance-pointed steel needle, with a penetrating depth of 1-3 centimetres, the *negative* galvano-caustic being usually resorted to. The needle is insulated in a rubber tube, up to the exact point of penetration. The insulator is pressed against the most prominent point of the tumor, which is usually in the lateral fornix, and the needle is plunged in—being careful to avoid a pulsating surface. Everything is rigorously antiseptic. The bed of potter's clay, being very pliable, adapts itself readily to the irregularities of the abdominal surface. The strength of the current used is from 100 to 300 milliampères. Many of these women who at the beginning of the treatment were almost bed-ridden, are now pursuing their usual avocations, and not one of them has ever had a bad symptom. Granting then, as needs we must, that the records in these reported cases are quite as reliable and trustworthy as are those of any surgeon, I again ask, Why perform the operation of Mr. Tait, which has for an ultimate object reduction of size of the tumor, by setting up the menopause, if electricity will produce the result more speedily, more safely, more surely, and to a more considerable extent?

Dr. Rutherford reports a case in which the tumor entirely disappeared under the plan of Apostoli, and Mr. Webb, of London, told me that he knew of a similar instance. All of us here, who attend the clinic, have seen a case in which the tumor is with difficulty made out. I ask again, Should the case be a suitable one for this method, why resort to the dangerous operation of laparotomy until electricity has been given a fair trial by competent persons? Apostoli's method arrests hemorrhage, diminishes size, relieves pain, and improves nutrition, without endangering life. Is there anything known to surgery which can offer as much?

Catarrhal salpingitis yields kindly to the simple action of the continuous current—one pole in the uterus. Pyo-salpingitis is more stubborn, and I am not ready to offer any decided opinion quite yet. I have seen Dr. Apostoli puncture (negative) the tube, then enlarge the incision and insert a drainage tube, in a woman bed-ridden with a specific purulent salpingitis. She is now performing her duties comfortably, but there is considerable discharge. In another case, one galvano-puncture relieved the woman to such an extent that she confesses to being well, and there is no abnormal feel of the tube either by vaginal or rectal touch. There is a large field here for study—a profitable one too. In the French Academy of Medicine they are discussing methods of drainage by uterus and vagina, without the necessity of operating, so that the minds of the surgeons themselves are turned in conservative directions. I am sure that the time is in the near future when electricity shall solve the riddle.

Metritis.—In an interesting monograph on this subject, under the caption: "On a New Treatment of Chronic Metritis," by Dr. Apostoli (translated by Dr. A. Lapthorn Smith), it is written:

"In the presence of a metritis of an anatomical form only slightly characteristic, when we are in doubt, and

when there is reason to ask ourselves the question whether the case is suitable for faradization or chemical galvano-cauterization, this is the practical and clinical means of deciding the question: We should try first faradization; if it is well borne from the beginning, on an average after the third or fourth application we should have obtained either marked relief, which would induce us to continue the same treatment—or a failure, in which case intra-uterine galvano-cauterization would be required. On the other hand, an improvement, even very marked at the outset, may wear itself out very soon, as it frequently does, and there again faradization must be replaced by galvano-cauterizations."

Dr. Apostoli concludes as follows:

"In establishing the therapeutical limits of the induced or faradic current, applied according to my double or bi-polar method: it is an excellent and sometimes sovereign remedy in certain cases (recent subinvolution, chronic metritis in the first stage); inefficacious, or at least very insufficient in others (such as chronic metritis in its later stages), and endometritis in any form."

I should like to commend this little book to the earnest study of all those interested in this subject, because it deals fully with all the methods, and in the appendix gives much valuable information as to the faradization of the uterus after labor, as well as to the use of the continuous current in fibroid tumors. It covers much ground within a small space. I have not yet treated, neither have I seen treated, a case of metritis after this method.

Endometritis.—I have seen a large number of these cases benefited by the continuous current, the positive pole being within the uterus. I have the records of four women who suffered from a fungoid condition of the endometrium, and in all of whom the benefit was marked. One girl, with weak eyes and coxalgia, with a specific endometritis and a not clearly defined salpingitis, grew better rapidly, but after each séance had quite sharp attacks of nausea and nervousness. In all forms of ulceration or hemorrhage the positive pole is indicated. This pole leaves a *white* scar, while the negative pole gives a deep *violet* scar. The positive pole is coagulating or hemostatic, and is the one around which the acids collect. Apostoli claims its action to be twofold: First, it arrests the hemorrhage; and secondly, owing to the retractibility of the positive cicatrices and to the greater or less atresia which follows it, a return of the hemorrhage later on is guarded against.

Peri-uterine inflammation.—Dr. Apostoli faradizes every woman, even when under an acute attack of inflammation, observing the following conditions:

"*a.* I proscribe every faradization that would cause the least pain, and expressly that of quantity, engendered by the bobbin with short and thick wire.

"*b.* I use for such cases the bobbin with long and thin wire, from which I obtain a current of tension on account of its specially anodyne effects.

"*c.* I begin with a simple vaginal application, by means of a large bi-polar electrode, the point of which is placed against the inflamed part.

"*d.* I only employ a current easily bearable, so as to cause no suffering nor any excitement to the patient, as this would insure an entire failure of the treatment.

"*e.* All the success of this medication depends upon making the first sittings sedative, so that they may serve as a prelude to more active measures; and the faradization will only become hyposthenic on the double condition of its low intensity and its long duration.

"*f.* Each sitting should last 5, 10, 15, 20, or 25 minutes, as may be required, and should not terminate before the patient spontaneously declares that she is better and suffers less.

"*g.* It is necessary to reinforce what has been said by dogmatically averring that no success will come out of this treatment unless it be managed not only without violence, but with extreme gentleness.

"*h.* There may be one or two sittings each day, as may be wanted, for lowering the febrile action, allaying pain, and bringing about what is called the subacute stage of the disease.

"*j.* Every faradization should be preceded and followed by a vaginal irrigation with the sublimate solution, and all of the sounds should be scrupulously disinfected."

In the *subacute* stage, use first bi-uterine faradization, with a current of tension; when the inflammation begins to give way, we use the intra-uterine *continuous* current, beginning first with the *positive pole* and following with the negative so soon as we are sure that the patient can bear it.

In the *chronic stage*, Apostoli uses with great success the continuous current and galvano-puncture (negative), making the puncture in the diseased part itself. In old cases of perimetritis, with much tenderness around the utero-sacral ligaments—cases which are very common and stubborn—much relief may be obtained by pressing the large bulbous vaginal electrode well up into the posterior fornix, while the negative pole is on the abdomen, using the induced current of high tension.

It were much easier to write a book upon these subjects than to outline them in mere profile, because, naturally enough, many points will come up for discussion which are not here discussed for want of time. Apostoli has gone into the whole matter very thoroughly in his numerous contributions to medical literature. They are easy of access, and I commend them to the earnest attention of those who have knotty points to be solved.

PARIS, January, 1889.

A CASE OF ACUTE YELLOW ATROPHY OF THE LIVER.

BY MARTIN W. BARR, M.D.,
RESIDENT PHYSICIAN AT PENNA. INSTITUTION FOR FEEBLE-MINDED CHILDREN, ELWYN.

I THINK in the practice of every conscientious physician there comes a time, while attending a case of desperate illness, when, after he has given one remedy, he regrets that he has not given some other: when he searches his books for assistance and is confronted by long lists of drugs, one seemingly as efficacious as another. But he gets nothing definite. Then how gladly would he appreciate

some specific information—some report of a similar case—no matter how crude or meagre it might be. For this reason I have tried to describe my case accurately, and have written out some of the prescriptions used.

It will be noticed that my treatment was extremely simple. I consider the nitro-hydrochloric acid dilute was my sheet-anchor. I used it for two reasons: for the reported action of both nitric and hydrochloric acids on the liver, and because I obtained such excellent results from the combination during an epidemic of typhoid fever some years ago. Probably any one of the mineral acids might act as happily.

The first authentic record of this disease was made by Morgagni,[1] who considered it extremely dangerous and difficult to cure. His opinion is endorsed by Graves, Frerichs, Rokitansky, Tanner, Buhl, Hilton Fagge, Grainger Stewart, Ozonam, Legg, Liebermeister, Harley, Oppolzer, Bright, Horaczek, Wagner, Späth, Von Dusch, Guckelberger, and Bartholow—besides many other well-known writers on hepatology.

Hanlon reports three cases in one family in one year, one of whom recovered. Griffin reports four cases in one house occurring within a short time of each other, two of whom recovered.

On November 2, 1888, I was hastily summoned to see Rissie R., a girl aged twelve years, residing in Cecil County, Md. The messenger briefly stated that she had had a congestive chill on the previous day, and was then suffering from a second. I will here mention that the autumn had been warm and rather dry, with but little frost, and her home was in a malarious district. Family history was good, ancestors on both sides having been for generations sturdy, healthy farmers, who had, for the most part, died of old age.

Rissie had never been a very robust child, and she had been troubled with chills since September. Her mother, without consulting a physician, dosed her freely with quinine, and, with her ears still ringing with the drug, she would have chill after chill.

It was almost two hours after my summons before I reached the patient, and the chill had passed off, leaving her much exhausted. She was a perfect blonde, with a fair complexion, light hair, and blue eyes. I found her slightly jaundiced, tongue heavily coated, breath fetid; pulse strong and rapid; temperature 103°. Prescribed ℈j quiniæ sulph. in solution, to be taken every four hours for twenty-four hours. I charged the system so heavily with this drug in order to prevent any possible recurrence of a third congestive chill.

3d. At my second visit I found my patient decidedly worse. There had been no chill, but the jaundice had become most intense. She was as yellow as if she had been dyed with saffron, the color of the conjunctiva being especially brilliant. Even the lips and gums had assumed a bright salmon color. The teeth were covered with brownish sordes, slightly tinged with green. The tongue was heavily coated, the fur being a bright grass green. Late the previous night distressing spells of vomiting had come on. The emesis was green, and was always preceded by a period of extreme nausea and retching. These periods became more and more frequent until they occurred every ten minutes, or oftener. Between each vomiting spell the child would lie with closed eyes in a lethargic state, only rousing occasionally to ask for ice. The urine was dark-colored and scanty. Pulse 124; temperature 104°. Extreme tenderness in epigastric and right hypochondriac regions; the slightest touch being sufficient to elicit cries of pain from the patient. On percussion I could distinguish marked diminution in size of liver, but could detect no increase in size of spleen. I then made a positive diagnosis of what I had before suspected—acute yellow atrophy of the liver.

I immediately prescribed acidi nitro-hydrochloric. dil. ♏v, every three hours, in water. I continued this drug (though less frequently in the later stages of the disease) uninterruptedly night and day until convalescence.

For the nausea and vomiting I gave the following prescription:

℞.—Bismuth. subnit. . . . . ℥ij.
Acidi carbolic. . . . . gr. iv.
Aquæ menth. pip. . . . . f℥vj.
Aquæ q. s., ad . . . . . f℥iij.—M.
Sig.—Teaspoonful in water every two hours.

Had a large, strong mustard plaster placed over the hepatic region.

I ordered as much milk, combined with lime-water, as the patient could be induced to take. Also brandy and ice *ad libitum*.

4th. Patient passed a bad night. Nausea and vomiting continued unabated. Some petechiæ on right side of trunk—but not very marked. Considerable pain on micturition.

5th. Patient passed another wretched night. Nausea and vomiting still present—if anything, slightly more intense than before. Vomit had become chocolate-colored and bloody. Milk was regurgitated in large curds almost as soon as swallowed. Retention of urine and constipation. Intense pain over whole abdomen. Discontinued bismuth and carbolic acid mixture. Prescribed minute doses of calomel 1–10 gr. every hour. Gave a hypodermatic injection (morphinæ sulphas, 1–6 gr., atropinæ sulphas, 1–180 gr.) in abdomen.

For the retention of urine I prescribed the following:

℞.—Fld. ext. hyoscyamus . . gtt. xxx.
Sodæ bicarb. . . . . gr. xxxviij.
Aquæ q. s., ad . . . . . f℥j.—M.
Sig.—Teaspoonful in cold water every three hours until patient micturates.

I ordered a rectal injection of hot water, castile soap, and glycerine. The patient had a copious dark-colored passage containing a great deal of blood. She fainted shortly after the injection, and

[1] De sedibus et causis morborum, Epist. x., 7, et Epist. xxxvii., 2, 4.

remained unconscious for some time. Was massaged briskly and revived. I allowed the mother, at her earnest request, to apply various poultices, spice plasters, etc., to the hepatic region.

6th. Found my patient somewhat better, but extremely weak. She passed a comparatively quiet night; the periods of nausea and vomiting were lessened in frequency and duration. After taking several doses of the hyoscyamus mixture the patient micturated freely. Had bowels moved by enema; stools dark and tarry.

7th. Jaundice had begun to fade. Nausea and vomiting lessened perceptibly. Pain in abdomen had returned in all its intensity. Administered another hypodermatic injection. No movement from bowels. Prescribed aloin 1-5 gr. three times a day.

8th. Was much improved. Had emerged from lethargic state and asked for chicken. The vomiting had ceased entirely, but occasionally she would have slight attacks of nausea. Jaundice was fast disappearing, also the petechiæ. Had had a dark passage early in the morning containing but little blood. The temperature, which had continued high during the whole of the attack, had now sunk to normal.

From this time on, the patient began steadily to improve. The jaundice faded rapidly, and the liver almost regained its normal size. I continued the dilute nitro-hydrochloric acid in five gtt. doses every four hours from November 8th to the 16th. From 16th to 25th, gave it three times a day. By this time the patient was practically well. Stopped the acid and ordered tinct. cinchon. comp. and a plain wholesome diet.

I did not see her again, but, on December 24th, met parents, and they told me she was in better physical condition than she had been for years.

THE TREATMENT OF CLUB-FOOT.[1]

BY THOMAS GEORGE MORTON, M.D.,
SURGEON TO THE PENNSYLVANIA HOSPITAL.

I HAVE recently had under care a number of cases of club-foot which I have treated by combinations of tenotomy, the open incision, and tarsectomy. In four cases both feet were involved. In one case the deformity was a severe equino-valgus, all the other cases were types of severe equino-varus, in which the patients walked upon the dorsi of the feet. Two cases were females; the youngest patient was four years of age, the oldest eighteen; all made excellent recoveries. Two of this series of operations were performed by Dr. T. S. K. Morton.

The proper time to treat most successfully talipes is at birth, when the infant foot readily yields to stretching and manipulation; although infantile varus can always be overcome, more or less equinus may persist and eventually require division of the tendo Achillis, but this operation should not be considered until the child is ready to walk.

Without any treatment deformities of the feet rapidly increase, the tissues become unyielding and the child eventually walks upon the dorsum of the foot, while the change which subsequently takes place in the tarsus practically precludes complete and satisfactory correction without an excision of a wedge, open incision on the inner side of the foot, and tenotomy.

The following cases illustrate this class of deformities:

CASE I. *Double equino-varus.* — James B., æt. sixteen, congenital double talipes equino-varus. Has never been operated upon. Legs are very poorly developed and he walks upon the dorsi of the feet.

October 9. I tenotomized all resisting structures in the left (his best) foot, broke it as well into position as possible, and placed it in position on a right-angle tin splint.

Result not very favorable.

31st. I excised the cuboid bone from the right foot and was thereby enabled to bring it into excellent position. Primary union of wound. Result perfect.

December 2. Left cuboid excised by Dr. Thomas S. K. Morton and foot brought into position. Primary union in this wound also. Result perfect. For some months he wore braces but then abandoned them, since which time he has worn ordinary shoes. With shoes on, no one could tell that he had ever had talipes, and scarcely could one believe upon looking at his bare feet what they had been before operation.

CASE II. *Equino-varus and equino-valgus*—I. S., aged eighteen, severe congenital equino-varus of the right foot, and equino-valgus of the left; both limbs poorly developed. I divided all the tendons concerned in the deformity, then being unable to bring the foot into a good position I excised a wedge of the tarsus, the base included the cuboid, the external and middle cuneiform and part of the scaphoid. Primary union and a perfect result followed.

Two months later, after tenotomy of the peronei and tendo Achillis, I removed a wedge from the inner side of the right foot to overcome the equino-valgus. The wedge included the scaphoid, and part of the internal, middle, and external cuneiform bones.

The result was entirely satisfactory; primary union followed the operation. Patient finally acquired perfectly useful and even very presentable feet.

CASE III. *Equino-varus.*—Miss X., æt. nineteen, had been operated upon in Germany when an infant. But one foot is involved; that presents a marked equino-varus with great deformity. July, 1888, Dr. T. S. K. Morton excised a wedge of tarsus of sufficient size to permit bringing the foot to a normal position. Catgut drains were used and primary union was secured. Placed in position upon right-angle tin splint and not dressed for three weeks after operation; foot then in excellent position. Oct. 1888:

[1] Read before the Philadelphia Academy of Surgery, May 6, 1889.

She is now able to wear an ordinary shoe and to walk without limp or discomfort. Result perfect.

CASE IV. *Equino-varus.*—In November last I made a tarsectomy of the left tarsus for equino-varus upon a girl of five years of age. She was one of six children, four of whom had been born with club-foot; one boy had double equino-varus; three girls had similar deformity, but confined to one foot. The parents were very robust people, and no other cases of deformity had been known in either family. I removed a wedge of the tarsus and divided all tense tendons, including the tendo Achillis, the posterior tibial, and the long flexor of the great toe. Result, as in all cases upon which I have operated in this manner, absolutely perfect, and her brace is about to be discarded for an ordinary shoe.

CASE V. *Double equino-varus.*—C. K., aged four years. No family history of talipes. Two other children free from deformity. Feb. 13: Excised wedge from left foot; usual technique. Dressed at end of three weeks; primary union; excellent position. March 21: Excision of wedge from right tarsus combined with extensive tenotomy and open incision of inner aspect of foot. Not dressed until end of fourth week. Solid union by primary intent and faultless position found.

This case is still wearing light supports, and is daily receiving massage and electricity—as, indeed, is ordered for all my cases, both before and, as soon as permissible, after operation.

CASE VI. *Double equino-varus.*—J. C., æt. four. Excision of wedge of right tarsus combined with tenotomy. Dressed in three weeks. Six weeks after first operation a wedge was likewise taken from the left tarsus and open incision made upon the inner side of the foot. Both feet perfectly restored in shape and utility.

CASE VII. *Severe equino-varus of right foot.*—Mary ——, aged twelve. Excision of usual wedge and tenotomy performed. Operation done three weeks since. Wound healed and result promises to equal in success all the others which I have performed.

The treatment of the muscles of a limb after club-foot operations is of very great importance. Congenital club-foot is the result of nerve changes, or, in other words, a sequence of intra-uterine paralysis, so that it is eminently proper that treatment after the correction of the deformity should be directed to the improvement of the nutrition of the limb. Therefore, massage, electricity, and douchings should be employed persistently for a long time subsequent to operation. In hospital dispensary work especially it is difficult to impress upon parents the absolute necessity for the long continuation of treatment after operative interference. It is usual to find the entire limb in a club-foot case less developed, the calf and thigh measurements show more or less atrophy, while in the length of the limb the difference is often very marked when compared with the normal extremity.

One important advantage gained in the treatment of club-foot by excision of a wedge from the tarsus is, that in at once correcting the deformity we avoid the necessity for the protracted use of steel braces, which are often heavy and clumsy, and which hinder the growth of the limb. If by a radical operation we can in a very short time overcome the deformity and also the tendency to recurrence and allow the child soon to wear an ordinary shoe, we most favor the development of the affected limb.

In operating for equino-varus I first section all resisting soft structures, then, if the foot cannot be brought to and held easily in a normal position, I make an incision on the outer side of the tarsus and remove a wedge with its base looking outward from the tarsal bones considered as a whole. In making this excision it is of the greatest importance that a sufficient amount of bone is removed: the apex of the wedge should come to a point almost or quite to the opposite side of the tarsus. With me the wedge will usually comprise: the anterior three-fourths of the cuboid, the whole of the external and middle cuneiform, with perhaps a shaving also from the anterior portion of the scaphoid, and the heads of the two outer metatarsal bones. If, when this much has been done, the foot does not come around to its normal position without the least resistance, I further remove the internal cuneiform, and, if also required, dissect out the remaining portion of the cuboid. For excising the wedge I employ ordinary cutting pliers in preference to the chisel, owing to the inevitable disadvantages incident to the bruising caused by the latter instrument, and because, in my hands, the cutting pliers have proved so much more accurate, easy of manipulation, and expeditious.

A HITHERTO UNDESCRIBED CAUSE FOR THE FAILURE OF THE RADICAL CURE OF HYDROCELE BY INJECTION.[1]

BY CHARLES B. NANCREDE, M.D.,
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IT hardly needs an apology for recording what appears to be a new pathological fact, yet the radical cure of hydrocele is usually so readily effected by the methods now in vogue that a paper on such a subject seems out of place. From the very frequency of the disease and the ease with which a cure is effected, the surgeon too commonly views it as a trivial affection and unhesitatingly promises a cure by the injection of iodine or carbolic acid, unless certain well-known contraindications exist, such as thickening of the sac, rigidity of its walls from calcareous deposits, etc. But despite the absence of these complications there are a certain number of cases where the confidently expressed

[1] Read before the Philadelphia Academy of Surgery, May 6, 1889.

Jesus don't I wish I was home

opinion of the surgeon is *not* verified by the result, for the patient is either not benefited at all, or the case relapses in a short time, damaging the surgeon's reputation and shaking his confidence in a thoroughly reliable and safe remedy, provided the condition I propose describing be not present. Although Mr. Curling mentions one case where a "loose cartilage" was evacuated by incision, and states that certain methods of treatment are applicable in the absence of these bodies, he makes no mention of the condition I have observed, nor does he suggest the possibility that the cartilages which he so vaguely mentions may stand in a causative relation to relapses after the operation for a radical cure by the injection of iodine.

Anatomists have described under the name of hydatids of Morgagni certain fringed or pedunculated bodies situated at or about the junction of the epididymis and testicle. These probably at times contain cartilage cells, which, doubtless, when accidentally detached, form the "loose cartilages" so commonly referred to by writers as an obstacle to the radical cure of hydrocele by injection, but which are so rarely detected in practice now-a-days —in fact, I think, judging from an extensive search through the literature of the subject, that most authors have copied the statements of their predecessors.

Whether containing cartilage cells or not, it is evident from the two cases which I report, that these fringes may have calcareous matter deposited in or upon them, although the remainder of the serous sac may not be even thickened, and that the constant mechanical friction will originate and certainly keep up disease after an attempted radical cure by injection, until removed, or we have resorted to such measures as will produce total obliteration of the sac—which, it is well known, the method by injection often fails to do.

Both patients suffered much pain—an unusual symptom in hydrocele; both had recurrence after a radical operation by injection had been attempted, but it will be noticed that the effusion was located chiefly at the upper portion of the cavity, the testicle lying below, contrary to rule.

This was so marked in the first case which I saw for Dr. Barton, during his absence from the city, that I considered it to be probably an encysted hydrocele of the testicle or of the cord. It is a fair inference, then, that the injection had so altered the serous membrane that its secreting and absorbing power had again become normal—for there were no adhesions, except in the immediate neighborhood of the constant source of mechanical irritation. This is all the more probable, since one patient stated that the size of the swelling varied. Probably such concretions as well as loose cartilages are more common than is supposed, because few modern surgeons incise or excise the tunica vaginalis testis.

Before briefly reporting two cases, I would suggest the propriety, since antiseptic methods have lessened the dangers of the cutting operation, that when failure occurs after injection, even where no thickening of the sac—calcareous or otherwise—is detectable, an incision at least large enough to admit the finger should be made, the cavity explored for calcareous concretions, etc., and a large drainage tube passed through another puncture seton-wise, a practice successfully revived, I think, by my colleague, Dr. Barton—full antiseptic precautions being of course taken.

As this paper is merely a report of cases observed, with practical points suggested by them, no attempt will be made to consider exhaustively the operative surgery of this disease.

By Dr. Barton's kindness I have been furnished with the following notes of the case upon which he operated in my presence, and which first called my attention to this peculiar pathological condition.

CASE I.—The patient, Mr. L., of South Carolina, had suffered three years with great pain in his testicles—especially the right one. This pain was only felt when he did not support the testicles. When sitting down with the testicles resting upon his legs he was entirely free from pain; but as soon as he stood up he suffered intensely, and was obliged to support the scrotum with his hand. His usual method of progression was with one hand in his pocket supporting the scrotum. His infirmity compelled him to confine himself to his store and to his boarding-house. His expressions of pain, his nervousness, and his mental excitement were such as to lead one to suppose that he was the victim of some mental trouble. Both testicles were enlarged and tender—particularly the right one. In the right tunica vaginalis, there was a small hydrocele, containing about one or two ounces of fluid, situated at the upper part of the vaginal sac. He had consulted a number of physicians and the hydrocele had been operated on twice—once by injection of iodine—but without benefit.

Under ether and with antiseptic precautions I opened the tunica vaginalis, liberated the fluid and explored the cavity with the finger. Directly beneath the testicle a bony mass about the size, shape, and hardness of a shrivelled grain of corn was found. Its attachments were so slight that it came away without effort and without our being able to say if it was attached to the visceral or parietal layer of the vaginal tunic. No further growths were found. A drainage tube was introduced, antiseptic dressings were applied, and he recovered without accident. Before going home he was able to walk about the city, which he did morning, noon, and night, taking more exercise of this kind in a few days than he had done in several years previously. He had no pain, though the testicle was still slightly tender on pressure.

CASE II.—My patient was an elderly man who had suffered with a moderate sized, very painful hydrocele for an indeterminate time. In April, 1888, Dr. Simes operated for the radical cure by the injection of carbolic acid. Severe inflammation followed, producing extensive sloughing of the scrotum and presumably of a portion of the vaginal tunic. When seen over a month later, the hydrocele seemed cured. Some time during the next six months—for I could get no very definite statement from him—the disease recurred, with the old symptoms of constant pain on movement. On coming under my care on April 1st, he showed me a small hydrocele, closely resembling in situation and appearance that first described.

Taught by the case seen with Dr. Barton, I opened the swelling by a free incision and considerably to my astonishment, at the junction of the upper part of the epididymis with the body of the testicle, I felt a little calcareous body like a miniature cock's-comb. I removed this with the finger, dissected out a portion of the tunica vaginalis, and, partially suturing the tunica and skin, drained the sac-cavity. Antiseptic methods carried my patient through with no untoward accidents, and at the last reports he was well and free from all his former suffering.

MEDICAL PROGRESS.

Survival after Wounds of the Heart.—DR. ANDREA CRISTIANI, Assistant to the Professor of Forensic Medicine in the University of Pisa, has lately recorded[1] a remarkable case, in which a man lived thirty-nine days after having received an incised wound of the heart. On April 22, 1888, a man, aged about twenty-five, was stabbed in several places in a brawl. One of the wounds was in the fifth interspace on the left side, about the situation of the anterior axillary line; there was a second in the eighth interspace on the same side, and another in the back on the left side, extending from the posterior border of the axilla toward the scapula. Besides these injuries, there was a stab in the left hip, and several others on the right arm. The wound first inflicted was the one in the back, the second that in the cardiac region, after receiving which the man fell to the ground, but was still able to recognize the assailants who dealt him the subsequent blows. He was carried home, and, when seen by a medical man an hour and a half later, was able to give an account of the affair. Though he lost an enormous amount of blood he did not faint, but complained of dyspnœa. The respirations numbered fifty in the minute; this lasted eight or ten days. There was slight pyrexia for twelve days, but beyond the fact that the least effort caused breathlessness and palpitation, there were apparently no particular symptoms. The wound in the fifth interspace cicatrized in seven, and that in the eighth interspace in eight days, while the one in the back took fifteen days to heal.

On the eighteenth day the patient got up, though still very weak and anæmic. On May 29th he complained of not feeling well, but in spite of this he walked into Pisa and back, a distance of ten kilometres (about six miles and a quarter) in the morning, and in the afternoon walked to a neighboring village, three kilometres (nearly two miles) from his home, with two companions. On the way back he climbed a tree in order to get a bird's nest, and on coming down fell to the ground and died in ten minutes. The necropsy showed that the stab in the fifth interspace had traversed the pericardium, and deeply wounded the wall of the left ventricle, at a distance of three and a half centimetres from the apex, without actually penetrating into the cavity. Between the edges of the wound was some soft coagulum, on removing which it was found that the deeper parts were pretty firmly united by organized blood-clot. This cicatricial tissue had quite recently given way at one spot, where there was a small opening leading into the cavity of the ventricle. The effort of climbing the tree, after the relatively severe exertion previously undergone, had burst open the partly closed wound, and broken down the frail barrier which was left between the ventricular cavity and the outside of the heart.

Dr. Cristiani attributes the long survival of the patient to the oblique course of the wound through the layers of the ventricular wall, and to the fact that the knife did not actually penetrate the cavity. The excellence of the patient's general health must also be taken into account, as owing to that there were no inflammatory complications either in the heart, the pericardium, the lungs, or the pleura. On the medical evidence the assailants were condemned to two years' imprisonment for attempted homicide.

To Dr. Cristiani's report is appended a note by DR. VITTORIO MESSERI, of Florence, relating the case of a man, aged thirty, who, on March 16, 1884, was stabbed with a thin-bladed knife in the fourth interspace one finger's breadth to the left of the sternum. He was admitted into the Hospital di Santa Maria della Consolazione at Rome, apparently in a moribund state. After some hours, however, the pulse became perceptible, and the heart sounds (both replaced by blowing murmurs) became audible. The external wound quickly healed, and the patient made such progress that he got up on the tenth day. On April 6th he felt so well that he asked to be discharged. On this being refused he flew into a passion, and walked quickly into the garden, where cyanosis with intense dyspnœa suddenly came on, and he died almost immediately. A large amount of blood was found in the pericardium and in the left pleural cavity. There was a wound of the right ventricle close to the interventricular sulcus, and a wound of the septum near its anterior margin. The former had healed, and the cicatrix had recently broken down, while the latter, on microscopic examination by Professor Marchiafava, was found to be surrounded by granulation tissue, which had transformed it into a kind of fistula.

Dr. Messeri refers to statistics collected by Professor Zanetti, from which it appears that among one hundred and fifty-nine cases of wound of the heart, in only ten was the septum perforated. In seven of these death was instantaneous, in one it took place in an hour and a quarter, in another in two hours, while in the remaining case the patient lived twenty days.—*British Medical Journal*, April 27, 1889.

The Use of Sublimate in Obstetrics.—Many practitioners of late have abstained from using sublimate of mercury in

[1] Lo Sperimentale, March, 1889, p. 245, et seq.

obstetrics owing to its poisonous character. DR. WINTERNITZ, of Tübingen, has conclusively proved by a long series of experiments, that the drug when used in solutions of 1 : 2000 has no poisonous effect whatever. He has, however, always taken certain precautions in its use. The back of the patient should be raised in order to facilitate the immediate flowing out of the solution after its injection. Great care should be taken that none of the solution enters the womb. Dr. Winternitz has used sublimate in 1644 births without ever having observed any symptoms of poisoning.—*Deutsche med. Wochenschr.*, April 18, 1889.

Transmission of Pneumonia in Pregnancy.—DR. NETTER lately brought to the notice of the Société de Biologie a case confirming the possibility of the transmission of an infectious malady from the mother to the fœtus in utero. A woman pregnant seven months and a half was admitted into the Hospital Beaujon for pneumonia of the apex of the right lung. The disease evolved regularly, and on the seventh day defervescence was produced. Two days after the fall of the body temperature the patient was delivered of a child that lived five days. At the necropsy there was found distinct pneumonia of the right upper lobe accompanying fibrinous pleurisy, pericarditis, suppurating cerebro-spinal meningitis, and otitis. Bacteriological examination demonstrated the presence of pneumococci in the lung and in the blood. It was, therefore, concluded that this pneumonia was clearly hereditary and not acquired, and that it had been transmitted by the mother to the fœtus. Moreover, Dr. Netter demonstrated by experimental proof this pneumonic transmission. A guinea-pig, whilst pregnant, was inoculated with a culture of pneumococci; these microörganisms were found in the fœtus.—*Lancet*, April 20, 1889.

Pastilles for Disinfection.—The *Rundschau für Pharmacie*, April, 1889, gives the following:

℞.—Paraffin	. . . . .	9½ parts.
Iodine	. . . . .	1 part.
Salicylic acid	. . .	2 parts.—M.

This mixture made into pastilles produces iodine and carbolic acid when burnt, and will both deodorize and disinfect the sick-room.

On Tubercle Bacilli.—PROF. KREMIANSKI, of Kharkoff, whose name is known in connection with the so-called aniline treatment of phthisis, has just published, in conjunction with Dr. Tseslinski, an article in the *Meditsinskoë Obozrênic*, on the importance of frequent microscopical examination of the sputum both for diagnostic and for therapeutic purposes, in cases where phthisis is or may be present. The patients examined amounted to 931, and they were most of them seen in Prof. Kremianski's polyclinic or out-patient department, something like 10,000 microscopical observations having been made during the course of the last two years. In addition, very thorough physical examinations were carried out, not merely by means of the stethoscope, but with the help of the spirometer, manometer, thoracometer, thermometer, and weighing machine. As far as possible, also, very complete notes were taken of the effects of different remedies.

Of the 931 cases, tubercle bacilli were found in 570, or in 61 per cent., including cases of the most diverse description, some having cavities, some apex consolidation, and some merely signs of bronchitis or bronchopleuritis. Thus, of the 570 cases presenting bacilli, 220, or 38 per cent., had cavities; 229, or 40 per cent., had apex consolidation; 19, or 3 per cent., had simple "bronchitis;" and 5, or 0.8 per cent., had "bronchopleuritis." A considerable number (97) of the cases were sent by medical men to have the sputum examined for the purpose of diagnosis. It was by no means uncommon to find a complete absence of bacilli in the sputum of patients presenting the clearest physical signs of phthisis—consolidation, and even cavities. Of 238 patients with cavities, bacilli were absent in 18, or in 7 per cent. Of 419 cases of consolidation, bacilli were absent in 190, or in 45 per cent. Of 54 cases of "bronchitis," they were absent in only 35, or in 65 per cent. Bacilli were never found in cases of uncomplicated emphysema—*i. e.*, where there were no cavities or consolidation in addition.

With regard to Prof. Kremianski's special method of treatment, while it was only successful in entirely arresting the development of bacilli in about 30 cases, it produced a cessation of the ordinary symptoms of phthisis—cough, debility, fever, sweats, etc.—in about 300 cases.—*Lancet*, April 27, 1889.

Cornutin in Obstetrics and Gynecology.—DR. H. THOMSON reports in the *Centbl. f. Gynäk.*, No. 11, some results obtained with cornutin at the Clinic of Professor Küstner at Dorpat. According to Dr. Kobert, the remedy was administered either subcutaneously, in the following formula:

℞.—Cornutin	. . . . .	grain ¼.
Water	. . . . .	℥ijss.

Mix, make solution, and add

Hydrochloric acid	. . .	gtt. iv.

or, in the form of pills:

℞.—Cornutin	. . . . .	grains 1⅓.
Hydrate of aluminium	. . .	" 46.

add water and glycerine āā q. s. for twenty pills.

Dose, two to three pills.

The cornutin in solution generally is not to be recommended, as it becomes cloudy and unfit for use in a short time. In weak or inefficient pains the use of this drug is, according to Drs. Thomson and Erhard, not to be recommended, while in atonic hemorrhage or after abortion it is of great value. Especially rapid is its action in metro- and menorrhagia following endometritis, metritis and inflammatory conditions of the uterine appendages. In two cases of menorrhagia the result of endometritis, from one-third to one-half grain of the drug, subcutaneously administered, produced intense lumbar pains followed by complete cessation of the hemorrhage within ten minutes. The influence of the drug lasted for two hours, after which another dose was necessary. In a case of very severe metrorrhagia caused by double ovarian tumors, two three-quarter-grain doses gave entire relief.

The average dose of this drug is from one-thirty-second to one-eighth grain subcutaneously and from one-

eighth to one-fifth grain by the mouth.—*Wiener med. Presse*, March 31, 1889.

On the Treatment of Whooping-cough.—DR. TORDEUS, of the Hôpital St. Pierre, Brussels, in a clinical lecture on whooping-cough, concludes with a few words as to the treatment he adopts. He has no faith at all in the administration of preparations of belladonna for the purpose of preventing the development of the disease; the only prophylactic measure which, in his opinion, is worthy of any reliance being the rigid isolation of the patients. He recommends that as soon as whooping-cough has broken out in a family all the other members who have not already had the disease should be sent away, especially those who may be weak, rickety, or very young, as such are predisposed to bronchitic and pulmonary inflammations. Before the children which have been sent away are allowed to return, a thorough process of disinfection should be carried out, not only of the room occupied by the patient, but of all objects with which he may have come in contact. This is to be effected by means of carbolic acid, chloride of zinc, the vapor of sulphur, boiling water, or the hot-air chamber, according to the nature of the things to be disinfected.

As to medicine, during the early or catarrhal stage ipecacuanha and bicarbonate of soda should be given, with the object of rendering the phlegm less thick and tenacious; afterward, when the nature of the disorder has declared itself, germicides—as carbolic acid, salicylic acid, benzoic acid, sulphate of quinine, resorcin, etc.—should be prescribed. M. Tordeus especially recommends inhalations of a three to five per cent. solution of benzoate of soda, even in the case of very young children, though he does not specify the kind of apparatus he employs for this purpose. In order to moderate the violence of the attacks, bromide of potassium, oxide of zinc, belladonna, hyoscyamus, cocaine, antipyrin, or chloral may be given. As the disease is beginning to disappear, expectorants, such as chloride of ammonium, senega, and liquorice, are useful; and, finally, anæmia and debility during convalescence may be treated by country air, cod-liver oil, preparations of iron, quinine, and arsenic, and nourishing diet. Where symptoms of broncho-pneumonia show themselves, all depressing drugs must, of course, be avoided. In such cases M. Tordeus recommends wet packs and carbonate of ammonium, combined with alcohol.—*Lancet*, April 27, 1889.

Puerperal Infection.—As a result of numerous investigations, carefully carried out, DR. E. CZERNIÉWSKI (*Archiv für Gynäk.*, vol. 1, No. 33, 1888) gives the following conclusions:

1. Microörganisms are found in the uterine cavity of healthy lying-in-women during the lochial discharge in exceptional cases only, from which it may be concluded that,

2. The lochia of healthy lying-in-women possesses neither pyogenic nor inflammatory properties. (Ott, Döderlein.)

3. Streptococci will be found in the lochia of the majority of lying-in women, even when the latter are only slightly diseased.

4. In fatal puerperal cases (especially lymphatic septicæmia) streptococci may be developed from cultures of the lochia, as well as from all secretions and organs after death.

5. The streptococci found in puerperal diseases are always the same, whether taken from slight or fatal cases.

6. The streptococci can cause erysipelatous inflammation and may lead to the formation of abscesses.

7. In infected cases the streptococci can cause degeneration of the parenchymatous organs.

Treatment of Acne.—DR. ISAAC, assistant to Dr. Lassar's clinic for skin diseases in Berlin, discusses in the *Berliner klin. Wochenschr.*, No. 3, 1889, acne and its treatment. As an etiological factor in the production of acne, he considers that hereditary peculiarities in the opening of the sebaceous glands may have an influence. In such cases the sebaceous duct is wide and funnel-shaped, offering a nidus for dirt and other septic material. Though such anatomical peculiarities may in exceptional instances predispose to acne, its causes are to be sought for in disturbances of the digestive, circulatory, or of the generative apparatus. The treatment in vogue at Lassar's clinic is the following:

℞.—Naphthol β . . . . . 10.0.
Sulph. præcipitat. . . . . 50.0.
Saponis virid. } . . . . āā 20.0.
Vaseline }

This salve is applied thickly to the affected portion of the skin either by a brush or a spatula, and left *in situ* for from half an hour to an hour. On the following day one notices some desquamation of the epidermis and slight irritation and retraction of the skin. This procedure is repeated every day until desquamation of the entire epidermis has taken place. Should much irritation be produced, the treatment may be temporarily stopped and the affected surface covered with an indifferent powder or with Lassar's paste. For especially stubborn cases the following modification of the ointment may be applied:

℞.—Pulv. cretæ albæ . . . . . 5.0.
Naphthol β }
Camphor } . . . . āā 10.0.
Vaseline }
Saponis virid. . . . . 15.0.
Sulphur. præcipitat. . . . 50.0.

The addition of camphor increases the irritative power of the ointment, which in this form should only be left on the skin fifteen minutes.

Another formula which has been found serviceable in the treatment of acne is the following:

℞.—Resorcin }
Zinc. oxid. } . . . . āā 5.0.
Amyli }
Vaseline 10.0

—*Journal of Cutaneous and Genito-Urinary Diseases*, May, 1889.

Hyoscin.—DR. O. KLINKE (*Centralbl. f. Nervenhlk.*, No. 7), from a number of investigations made with this drug, reaches the following conclusions:

1. Hyoscin is, on account of its cheapness, tastelessness, and easy mode of administration, to be preferred to the other ill-tasting hypnotics now in vogue.

2. Subcutaneously as well as internally administered

one should always begin with the smallest doses, as individual tolerance of the drug varies greatly. Doses administered by the mouth should be double those administered subcutaneously; though the action of the former is somewhat retarded, it possesses the advantages of not inducing unpleasant and at times alarming symptoms. Preference is to be given to administration by the mouth, its sleep-producing action being far more certain when thus administered than when subcutaneously injected, although during the day-time the latter mode might be advantageously resorted to, to control quickly any unforeseen symptoms. It has never been found necessary to administer larger doses than $\frac{1}{100}$ gr.

3. Hyoscin paralyzes the motor and secretory centres, slows the pulse and respiration, produces dryness of the mouth and throat, and mydriasis, paralyzes the accomodation, disturbs the appetite and at times induces vomiting.

4. Hence it is used with advantage in the treatment of severe motor disturbances, constant talking, and especially in the maniacal condition of excited paralytics. In conditions of melancholia hyoscin is of little or no value, while morphia is the remedy *par excellence*.

5. No doubt remains of the power of this remedy of inducing hallucinations first of a despondent, then of an exhilarated character. It is, therefore, essential that it should be but sparingly given to recent mental cases, while older patients may receive larger doses, provided the existence of any cardiac complication be previously excluded.—*Prager med. Wochenschrift*, April 10, 1889.

Lanoline and Perchloride of Mercury.—According to a paper by DR. A. GOTTSTEIN (*Therap. Monatsch.*, March, 1889), lanoline with perchloride of mercury possesses several important surgical advantages. Koch has already shown the relative inefficacy of carbolized oil. Gottstein now asserts that although oil, lard, and fat completely prevent the action of antiseptics, lanoline with perchloride of mercury is as powerful a disinfectant as an aqueous solution of the perchloride. In the treatment of large ulcerated surfaces he considers that this combination will be serviceable, as it will minimize the risks of absorption, while it will insure a more complete covering of the affected part, and its preservative action will be more continuous. Ebstein, in the *Deutsche med. Woch.*, confirms these views, and recommends the employment of this combination in the treatment of threatened bedsores; and from Dr. George Meyer, of Berlin, comes the suggestion that it can also be used to protect the hands of surgeons during antiseptic operations. The roughness and disfigurement of the hands, caused ordinarily by strong solutions of carbolic acid, are said to be obviated by lanoline. In spite of the conflicting statements hitherto made of the absorptive powers of lanoline, it appears to have been conclusive proved that, even in the absence of perchloride of mercury, it is unfavorable to the percolation and development of microörganisms. It is highly probable that its true use as a protective has now been established by Dr. Gottstein.—*Lancet*, April 27, 1889.

Arsenic in Malaria.—DR. RICCHI, in a paper read before the Societa Medico-Chirurgica, of Bologna, on March 8th, gave his experience of arsenic in the treatment of malaria. He had been able to test it on a large scale, having been in medical charge of the officers and servants of the Adriatic railway system for several years. His experiments were made in districts where the disease was particularly rife. Of 2501 men on whom the method was tried, 579 were suffering from acute and 1384 from chronic malaria. The remaining 538 were free from the disease, so far as persons can be so who live with scarcely any hygienic precautions in places where it is endemic. In the acute cases arsenic was of little use, but it gave excellent results in the chronic cases, and in the others it seemed to confer immunity, or, if they contracted the affection, it was of a mild type and easily cured with quinine. The men put on flesh and lost the pallid, cachectic look characteristic of dwellers in malarial regions. According to Dr. Ricchi, there can be no doubt that "the daily administration of arsenious acid increases the resistance of the organism to the action of the microbes of malaria." The treatment must be methodically carried out—that is, the drug must be given in time and continued as long as may be necessary.—*British Medical Journal*, April 27, 1889.

A New Deodorizer for Iodoform.—CAUBRELLE (*Bulletin de Thérap.*, cxiii. 9) recommends the following formula for deodorized iodoform:

℞.—Iodoform . . . . . grs. 15.
Menthol . . . . . gr. ¾.
Ess. lavender . . . . gtt. j.—M.

A little spirits of lavender added to the water in which the hands are washed will completely remove the odor of iodoform from them.

Kefir in Children's Diseases.—Kefir, a substance something like koumiss, made in the Caucasus, has long been utilized as a stimulant and easily digested food in various wasting diseases, such as phthisis. Until recently, however, it was but little known beyond the locality of its origin. Kefir has of late attracted some attention, and has been employed in some of the hospitals both of France and Germany. DR. E. KRAUSS, of the Children's Department of the Vienna Polyclinic, has collected a good deal of valuable information on the subject, which he publishes in a Vienna medical journal. Kefir consists of milk which has undergone two distinct kinds of fermentation—the alcoholic, produced by the yeast-like cells of the ferment, and the lactic acid fermentation, due to a bacillus also contained in the kefir; the actual contents being alcohol, lactic acid, carbonic acid, and peptone. It has been given to children as young as two months, and is said to have proved most valuable in gastric and intestinal catarrh.—*Lancet*, April 27, 1889.

Infantile Dyspepsia.—DR. M. J. SIMON, in the *Gazette hebd. de Méd. et de Chir.*, prescribes the following in cases of infantile dyspepsia:

℞.—Codeine . . . . . gr. $\frac{1}{32}$ to $\frac{1}{16}$.
Magnesia, Powdered crabs'-eyes } . . āā grs. 2.
Rhubarb . . . . . gr. 1.
Nux vomica . . . . . gr. $\frac{1}{8}$.—M.

One powder of the above formula should be given after each meal.

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SATURDAY, MAY 18, 1889.

FILTRATION THE BEST MEANS OF PURIFYING THE PUBLIC WATER SUPPLY.

No one will dispute the statement that an abundant supply of pure water is essential to the health and comfort of a community. Yet this great truth is either not properly appreciated, or its application is beset with extreme difficulties, for it is seldom that the water supplied by public works reaches a proper standard—of purity, at least. It is generally not a serious problem to obtain water in sufficient quantity for all municipal purposes, but there is frequently great difficulty in securing the proper quality. The reason is that our rivers, which are the main source of supply, are allowed to become polluted, and the evil is extending with the growth of population. Community of interests should proscribe this pernicious practice, but it does not. Legislation in this country has done very little in protecting our streams from gross pollution. No such law as the Rivers Pollution Act of England exists upon our statute books, although the necessity for such a restriction is plainly apparent.

Water polluted by sewage is unfit for use, and dangerous without purification. Apart from the conditions which give rise to disease of mild type, there is the possibility of impregnation with disease-germs which may lead to widespread sickness of a serious character. The wisest and the most economical plan, if universally adopted, is the radical measure of prevention, but as this is a utopian conception, individual communities must resort to some other method to insure the purity of their water-supply. Sedimentation, filtration, aëration, and chemical treatment are the means of purification at our disposal. All of these plans may be used conjointly, but that by filtration, which includes sedimentation, is the most practicable and efficient, and the one most commonly employed. In fact, filtration is the only possible means of removing, on a large scale, the infectious matter which water sometimes contains. Domestic filtration, which is practised to a limited extent, is at best but a partial remedy, and is often most unsatisfactorily performed. The aggregate expense imposed upon the people for its maintenance would go a great way toward procuring the most complete purification of the entire public supply.

Beside sedimentation, by which particles of suspended matter which produce the discoloration fall to the bottom, there may be used as preliminaries to filtration, both artificial aëration to assist in oxidation, and chemical treatment by which substances are added to the water in order to coagulate and render insoluble contained impurities. But filtration is the main feature of purification, by which, as Frankland and others have demonstrated, it is possible to deprive water of germ life and render it otherwise potable.

In most of the large cities of the old world, and in some of the smaller cities in this country, filtration works are deemed necessities and are maintained with the most satisfactory results. The *Deutsche medizinische Wochenschrift*, No. 3, 1889, contains an instructive account of the filtration works at Berlin, and the mode of testing their efficiency. These works have been constructed within recent years after the most approved plans, and have been operated with great satisfaction. They may therefore be looked upon as model works. There are in operation eight open and sixteen covered filters of great magnitude, which collectively are capable of delivering daily 100,000 cubic metres of filtered water. The filter-beds are composed, in the usual manner, of layers of stone of different sizes, gravel, and sand. The water is allowed to stand at least twenty-four hours before the process of filtration commences, in order to allow the deposition of suspended matter to take place. The layer of organic and inorganic matter thus formed is of great service in holding back most of the bacteria. When the purifying power of the filter begins to fail, as indicated by

proper tests, the water is drawn off, the sediment removed, and the renovated works again set in action.

In order to determine the efficiency of the process, weekly tests are made of the unfiltered water and of samples taken after filtration both from the basins and from the service pipes in a number of places throughout the city. Each test includes a chemical and a bacteriological examination of the water. No matter how great or variable the quantity of bacteria in the water before filtration, the relative number in the filtered water varies but little from a very low average. Rarely does the number of organisms in water taken from the service pipes exceed three hundred per cubic centimetre. The bacteriological examination has further demonstrated that there is no perceptible difference between the water in the service-pipes and that delivered fresh from the filter-works. The results thus obtained have led the authorities to establish a bacteriological station at the water-works, and to abandon the examination of the water in the city as superfluous.

The results of the experience of Berlin illustrate two important facts: That filtration is a practicable and thoroughly efficient means of purification of public water supplies; in fact, the only means of removing, on a large scale, infectious matter from water; and that bacteriological examination is the only means of testing the efficiency of the process. These facts are of great moment to every community depending on public works for its water supply, and well worth pondering and turning to useful account. It seems incredible that communities of wealth, intelligence, and progressive spirit are content to use water just as it may happen to come from the river or collection basins, often repulsive to sight and taste from scourings of the watershed by heavy rains or from excessive proportion of organic matter in times of drought, and rendered unwholesome by contamination by the sewage and excreta of the population resident on its banks, without any attempt at artificial purification. The health of the people is paramount to all other considerations, and in conducing to this object no measure is comparable to the provision of a water supply of the highest attainable purity.

HYDROGEN PEROXIDE IN DIPHTHERIA.

THIS subject has in part engaged the attention of two successive meetings of the Kings County Medical Association, Brooklyn. The remedy is undoubtedly one of great potency, but it does not rapidly advance in professional esteem, for the reason that its preparation and administration are not unattended by difficulty; or, more properly expressed, they require some attention and care. The undilute peroxide being very unstable, it is only found in the drug-stores in solution in water containing a small proportion of hydrochloric acid. A fifteen-volume solution is prepared, which contains fifteen fluidounces to the pint, the cost of which is nine dollars per dozen pint bottles. Below 59° F. this solution will maintain its oxygen fairly well, but above that point its efficiency decreases. It should, therefore, be kept in a cool place; the heat of the hand is sufficient to liberate the gas, and hence the bottle should be handled by the neck and carried by a string attached to its neck. The fifteen-volume solution is not to be used in its full strength, but should be diluted for all spraying or injection purposes; three ounces of the above solution, if added to a pint of water, will be strong enough for adults, and two ounces to the pint for children. Spraying apparatus should be of hard rubber, and not of metal, since the oxygen readily attacks most metals, and the resulting solution might be injurious. The two-volume solution, just referred to, may be used every three hours, or oftener, in the case of children, the nose, throat, and mouth being flooded by means of a spray-producer. The excess of the solution that may find its way into the stomach or larynx is not harmful, but rather beneficial. Patients old enough to gargle should use the three-volume solution in that manner.

The dosage above given is that recommended in a paper by DR. E. R. SQUIBB, before the Association above mentioned, published in *Gaillard's Medical Journal* for March. Since the reading of that paper, some considerable trial of the drug has been made, with generally good report. From the testimony of some of these experimenters, the cleansing and disinfecting powers of the peroxide surpass those of any application heretofore tried by them. Its administration is quite unobjectionable, even to the young, the solution being only slightly acidulous in taste, odorless, and colorless. There is a kind of after-taste or impression that is not lasting nor essentially disagreeable—less so than in case of most of the medicaments used in this affection.

To sum up the case, it would appear that in this relatively tasteless and innocuous solution we have about the best of the antiseptics and cleansers that

are known to chemistry, and one that is far less prone to toxic risks than some of the solutions—as, for example, corrosive sublimate—that have been widely used of late. There are other uses of this peroxide, where the throat and mouth require strict cleansing, as in scarlet fever; also in uterine cancer, and in indolent sores where deodorant action is indicated. In the last class of cases a one-volume solution will commonly be sufficiently strong. In cancer it can be used indefinitely strong, or until the disinfectant effect is attained.

A CONVENIENT MODIFICATION OF THE COLD-WATER TREATMENT OF FEVER.

THERE can be no doubt that the safest, if not the most effective, of all antipyretic agents is sponging the surface of the body with water, either tepid, cool, or cold. A still more effective and quite as convenient method of applying water to the skin is in the form of spray as described in a recent number of the *Prager medicinische Wochenschrift.* Preyer published an account of this method in 1884, although it had been employed somewhat earlier by Flashar. In 1886 Hiller applied it to the treatment of sunstroke. Placzek modified the procedure by spraying first with cold water (53°–60° F.) and directly after with warm (95° F.). In this way he produced a fall of two degrees in the temperature of a febrile animal. The warm spray produces a rapid dilatation of the skin capillaries and consequent dissipation of heat.

Such measures as these, which are in close imitation of the natural processes of heat regulation, deserve the most careful study. Their soothing effect upon the nervous system is in marked contrast to the prostration so often induced by the antipyretic drugs that have been lately introduced in such numbers.

THE San Francisco Polyclinic was opened on March 1st for post-graduate instruction. It is proposed to build a hospital in connection with the institution.

THE Trustees of the Jefferson Medical College, last Monday, elected Dr. William W. Keen to the Chair of Principles of Surgery and of Clinical Surgery, rendered vacant by the death of Dr. Samuel W. Gross. Dr. Keen has been a most able teacher of anatomy and surgery for more than twenty years, and a surgeon of large operative experience. His reputation for sound judgment, scholarly attainments, and successful teaching give assurance that he will well maintain the fame which the Chair of Surgery at Jefferson has for so long a period enjoyed.

THE annual meeting of the Association of Medical Superintendents of American Institutions for the Insane will be held at Newport, R. I., June 18th next.

THE fourth session of the French Congress of Surgery will be held at Paris, on October 17 and 18, 1889, Baron Larrey presiding. The following questions will be the order of the day: 1. Immediate and after results of operations for local tuberculosis. 2. Surgical treatment of peritonitis. 3. Treatment of aneurism of the extremities.

WHAT is more interesting than the analysis of the intellectual workings of a great mind, when made by himself? Dr. Holmes has just done this for us, on a limited scale, in a letter published in the *Canadian Medical and Surgical Journal*, April, in reference to a commendatory comment written by Dr. William Osler concerning the part taken, long years ago, by Dr. Holmes in teaching correct views on the subject of puerperal fever. The genial Autocrat writes as follows: "There was a time certainly in which I would have said that the best page of my record was that on which I fought my battle for the poor poisoned women. I am reminded of that essay from time to time, but it was published in a periodical which died one year after life, and it therefore escaped the wide notice it would have found if it had been printed in *The American Journal of the Medical Sciences.* A lecturer of one of the great London hospitals referred to it the other day, and coupled with it some fine phrases about myself which made me blush either with modesty or vanity, I forget which. I think I will not answer the question you put me. I think often of the "Chambered Nautilus," which was a favorite poem of mine, if I wrote it myself. The essay only comes up at long intervals; the poem repeats itself in my memory, and is very often spoken of by my correspondents in terms of more than ordinary praise. I had a savage pleasure, I confess, in handling those two professors, learned men both of them—skilled experts, but babes as it seemed to me in their capacity of reasoning and of arguing. But in writing the poem I was filled with a better feeling, a higher state of mental exaltation, and the most crystal clairvoyance, as it seemed to me, that had ever been granted to me. I mean

that lucid vision of one's thought, and all forms of expression which will be at once precise and musical—which is the poet's gift, however large or small in amount or value. There is a more selfish pleasure to be had out of the poem, but perhaps a nobler satisfaction flows from the life-saving labor."

A SPECIAL meeting of the *Sei-I-Kwai* of Tokio was called last month, in memory of the death of DR. DUANE B. SIMMONS, which took place in Tokio on February 19th. Dr. Simmons was a native of Milan, Dutchess Co., N. Y., and was one of the oldest foreign residents in Japan, having been there since 1859. He has done much toward the advancement of medical science in Japan, and the present excellent condition of the Medical School of the Tokio University is largely due to his untiring zeal. The meeting of the *Sei-I-Kwai* was not attended by members of the medical profession alone, but Japanese journalists, politicians, and statesmen joined with the profession in paying tribute to his memory.

SOCIETY PROCEEDINGS.

PHILADELPHIA ACADEMY OF SURGERY.

Stated Meeting May 6, 1889.

THOMAS G. MORTON, M.D., IN THE CHAIR.

DR. H. PACKARD read a paper on

SEPARATION (COMPOUND) OF LOWER EPIPHYSIS OF FEMUR; AMPUTATION.

Owen McK., æt. nine years, was admitted to St. Joseph's Hospital April 16, 1889, having had his right lower extremity caught in a wheel of a wagon behind which he was hanging.

A very large ragged wound existed at the back of the thigh, very low down, involving the popliteal space. Through this wound the end of the shaft of the femur protruded, stripped cleanly of periosteum, and showing the nodulated surface which had fitted to the epiphysis. The condyles were still in contact with the articular surface of the tibia, but tilted so that, as the boy lay on his back, their cartilaginous covering looked upward. They were also pressed toward the posterior part of the limb, so that the tibia seemed as if partially luxated forward.

Very little blood had been lost, and the boy's general condition was excellent. He was etherized, and a careful examination made. The soft parts were found to be very extensively torn, but the vessels were apparently whole. The foot and leg, however, were markedly colder than on the opposite side. On extension, the end of the shaft could be reduced, but the tilting of the epiphyseal portion could not be overcome so as to restore the proper relation of the two. Resection was considered, but rejected for two reasons: in the first place the position of the epiphysis, and in the second place the great probability that the vessels had suffered and that secondary hemorrhage would ensue, or gangrene of the limb below if they were plugged. The limb was, therefore, amputated, with a long anterior flap, the bone being sawed through about an inch and a half above the end of the shaft. The bruised and torn muscular structures were carefully removed. A large periosteal covering was laid over the sawed end of the bone and sutured with fine catgut. Sutures were also applied to keep the deeper tissues in contact, and the lips of the wound were approximated with silkworm-gut, shotted.

On examination of the amputated limb it was found that the tilting of the epiphysis was due to the upward pull of the quadriceps femoris upon the patella, and to the attachment of the heads of the gastrocnemius to the posterior portion of the epiphyseal fragment. With the exception of a very small chip torn from the anterior edge of the end of the diaphysis the lower fragment seemed to consist of the epiphysis alone, separated exactly at the line of union between the two ossifying portions.

This seems to me to be one of the points of interest in this case; another being the tilting of the epiphyseal portion and its cause, which, so far as I know, has not been noted in any other instance hitherto reported. Another point of some importance is the condition of the vessels, which, it seemed at first sight, must surely have been torn across. That they were not so torn—and they are said to have escaped in several of the other cases on record—seems to me to be attributable in part, at least, to the twisting of the limb at the time of the accident, the shaft of the bone not following the rapid movement of the lower portion, so that the vessels and nerve were caused to slide over it in an inward direction, instead of being stretched over it as it was forced backward.

This particular accident, as is well known, has been noted as the cause of separation of the lower epiphysis of the femur in more than half of the recorded cases. I believe the statement of Reverdin holds good, that in only two instances has the attempt to save the limb been attended with success.

The boy has done remarkably well; a small slough separated from the edge of the anterior flap, but the aseptic condition of the wound was not interfered with by this circumstance, healing being now almost complete on the seventeenth day.

DR. JOHN H. BRINTON desired to exhibit another specimen of the same injury with a brief report of the case. The specimen was presented seven years ago to the museum of the Jefferson Medical College, by Dr. Willis T. Davison, of Pennsylvania. The patient was a boy twelve years of age, who, while riding on the back of a buggy, had his left foot caught between the spokes of the wheel and carried forward, producing a separation of the epiphysis with a slight nipping off of one portion of the edge of the diaphysis, as shown in this bony preparation.

A few hours after the accident the patient was seen by Dr. James Davison, of Canton, Pa., who found an oblique wound, four or five inches long, extending across the upper portion of the popliteal space. The skin, superficial fascia, and muscles were severely lacerated, and there was copious venous hemorrhage and extensive extravasation around the joint and upper part of the leg;

no pulse could be felt in the posterior tibial artery. The boy was able to turn over and imperfectly raise the knee from the bed. An unsuccessful attempt was made to save the limb, but amputation was necessary on the fourth day, and the patient made a good recovery.

Careful dissection of the amputated limb showed that the epiphysis had been torn from the diaphysis, and the artery injured in such a manner that a probe could with difficulty be passed through it. It was also found that there was a rupture at the posterior part of the synovial membrane opening the knee-joint.

The account given by Dr. Packard of his case would apply almost without alteration to this one. It was thought by the reporter of this case that the leverage was exerted by the bone being caught between the spokes and the cross-iron of the buggy. At the time this case was reported it was believed to have been the seventh instance of this injury.

DR. PACKARD stated that the specimen did not represent the full amount of bone exposed and deprived of periosteum. The injury to the soft parts was very great. The bruised and lacerated tissues were cut away with much care. His first idea was to resect and apply the end of the diaphysis to the surface of the epiphysis. He found great difficulty, however, in replacing the epiphysis, and could not at the time tell what the reason was. It seemed to him scarcely justifiable to make incisions to free it. He thought that the attempt to save the limb would subject the patient to greater danger than amputation. There was also great probability of injury of the vessels, with the danger of secondary hemorrhage or gangrene of the whole limb, and possibly blood poisoning. Under these circumstances it seemed to him that the proper course was amputation.

According to Reverdin, the attempt to save the limb has been successful in only two out of about thirty cases of compound separation of the lower epiphysis of the femur.

DR. CHARLES B. NANCREDE disclaimed any criticism of the treatment employed in this case, but wished simply to report an instance of involuntary conservative surgery, showing what can sometimes be effected in the injuries of children. A child three and one-half years of age was run over by a loaded coal-cart, the wheel traversing the groin just below the line of Poupart's ligament. For about two-thirds of the diameter everything down to the bone was crushed. The bone was broken and the skin also stripped from the muscles on the outer side of the limb. Everything was crushed except a bridge of skin and muscle on the outer side. The femoral vessels which traversed this gap, filled with coal-dust, was all that was left on the inner side except a portion of the adductor longus. He, of course, suggested the propriety of amputation, but was allowed to do nothing. He did his best to drain and antisepticize the wound. On the fifth day, just as the dressing was removed, the femoral artery gave way. He caught it and tied it above and below the profunda. Inside of half an hour the collateral circulation was established. This was over thirty days ago. The bone is covered with granulations; secondary abscesses have formed and been drained. But while the child is steadily losing ground, so far it has survived an apparently hopeless injury *without* amputation, and may yet recover a useful limb.

DR. MORTON read a paper on

THE TREATMENT OF CLUB-FOOT.

(See page 542.)

DR. J. H. PACKARD said that it is highly important that after the operation the development of the muscles shall be attended to. This idea is, of course, not a new one, but it deserves fuller appreciation than it has generally received. A year ago he operated on a case, removing the astragalus for caries. Six months later the child was brought to him on account of a tendency to draw the knee back. All the muscles were wasted and the limb was decidedly smaller than the other. The child walked badly. He directed the mother to make systematic massage of the muscles; the result has been a marked improvement in the gait. He supposed that there is nothing better established than that there is a nervous element at the root of all these troubles. His own observation has been that in cases of one-sided club-foot there is a decided difference in nutrition in favor of the sound limb as against the distorted limb. He doubted whether sufficient attention is drawn to this matter of the development of the muscles.

EIGHTH GERMAN CONGRESS OF INTERNAL MEDICINE.

Held at Wiesbaden April 15th to 18th, 1889.

(Continued from page 531.)

(Specially reported for THE MEDICAL NEWS.)

DR. DETTWEILER, of Falkenstein, read a paper on the

INFLUENCE OF SPUTA AS A MEANS OF TRANSMITTING TUBERCULOSIS.

In an article written by Dr. Cornet in the *Revue d'Hygiène* last year, the author draws particular attention to the danger of contagion by the sputum, by handkerchief, by the floor, by the spittoon. The expired air is not contagious, and the tubercular patient becomes dangerous only by his sputa, the only source of contamination being the specific bacillus.

If we prevent the patient from spitting anywhere he likes, if we thoroughly disinfect all the clothes which may have had sputa in contact with them, we have done all in our power to prevent the patient from being a source of contagion to the persons who surround him.

In the hospital spittoons have been introduced which, unluckily, are not hermetically closed. In private practice, however, the state is even worse, for the patient will expectorate in his handkerchief, and, if no one is present, he will not hesitate to do it on the floor. In this manner he becomes a source of infection, a great danger to those in immediate contact with him. At church, in stores, saloons, theatres, etc., these patients are a danger for those who come after them. This would explain more readily the heredity of tuberculosis, for, whatever may be the favorable state of an organism for receiving the disease, one can only become tuberculous by the medium of Koch's bacillus.

It is then necessary to interfere, and prevent all these phthisical patients from infecting, by means of their sputa, their handkerchiefs or the floor of their room; and he thought it necessary that any family that has a phthisical patient must be informed of the danger to

which they expose themselves if they are not strictly careful. We, as physicians, must combat as powerfully as we can the habit of spitting in handkerchiefs, the source of most infections.

PROF. EBSTEIN, of Göttingen, then read a paper

ON THE PATHOGENY OF GOUT.

He said two forms of gout are usually described, an articular form and a renal one. Articular gout is a chronic form; tophi will appear during as well as after an attack of the disease.

The idea of Garrod, that these formations of crystallized uric acid occur on account of the gouty inflammation, is not admissible; our anatomical and experimental researches demonstrate and prove it certainly. Uric acid is a chemical poison which determines or produces a necrosis much more easily than an inflammation.

It is because these tissues are in a state of necrosis that we have these formations of crystallized uric acid. This conception of the previous necrosis of the tissues, under the influence of the uric acid poison, explains why we meet with severe visceral or other gouty affections without any traces of tophus.

The toxicity of uric acid can also only show itself in a transitory form. Its presence irritates the tissues, but when it has disappeared the symptoms all disappear, and it would be very difficult to find any traces of its passage; this fact applies to nearly all chemical poisons.

The most interesting gouty manifestations are certainly those which concern the viscera, and especially those of the digestive apparatus and its allied parts. The participation of these viscera has been the point of departure of a great many theories on the pathogeny of the gouty affection. However, whatever may be the theory adopted, one cannot conceive that an excessive uric acid formation could alone start a gouty attack. He could not accept the opinion of Garrod, who explains gout as being an excessive production of uric acid and temporary incapacity on the part of the kidneys to eliminate this acid.

There are several causes which can produce a stasis of uric acid; amongst them all the functional diseases of the kidneys, or any retention of used-up material due to a morbid modification of the nutritive changes; in this last example it is the kidney which is primarily involved by gout, and we have then to deal with the primitive renal gout, which is a very fatal form of the affection.

The crystalline deposits of uric acid explain sufficiently the anatomical lesions of the primary gout of the articulations. The marrow of bones and the muscles created, so to say, almost exclusively the uric acid, which, starting from these points of origin, passed into the lymphatic channels, to infect finally the whole mass of the blood. The uric acid which is carried about by the blood undergoes no further modification, and the kidney eliminates it without its having lost its distinctive characters. The uric acid impregnation of the blood is a very easy matter. The acid travels very slowly along the lymphatic channels, and the gouty deposits are nothing more than so many points of arrest for the acid. The fact that, in gout, the heart and bloodvessels are often involved, proves the necessity of a temporary stasis for the realization of a gouty attack.

It is in those conditions, which will allow the local stasis of uric acid, that he finds the connecting link which unites gout to rheumatism on one side, and to syphilis on the other.

DR. PFEIFFER, of Wiesbaden, then spoke of the

TREATMENT OF GOUT.

Gout does not always manifest itself by involving the kidneys or articulations; the skin is often involved and in an isolated manner; gouty affections of the skin are sometimes so marked that the swelling and redness may be taken for an abscess, but we all know that a gouty abscess has not yet been discovered. On the other hand, we have a gouty patient who complains of pain in the knee; one believes in a gouty attack, but when we look more closely, we are surprised to find that the communicated articular movements are not at all painful. This is because the attack does not involve the articulation itself, but is located exclusively on the external integument. Often the first tophi are met with on the skin, and the skin of the fingers only sometimes; the patient does not notice them. Gout before becoming articular is nearly always dermic. In a patient he has discovered an enormous tophus on a level with the elbow, without its presence having produced the slightest pain. He did not believe in the necrotic process of gout; a deposit of urates can determine a violent inflammation, but this never extends to a real necrosis. The necrosis of a tissue during an attack of gout is nearly always due to a traumatic lesion; in a gouty patient, who was continuously fencing, the necrobiosis of tissue due to gout occurred on his right hand. The gouty individual eliminates much less uric acid than the normal person; in the first the uric acid, which is present in great quantities in the serum of the blood, is no more eliminated, because it has lost its exosmotic power; the organism produces more uric acid than it eliminates; and when the attack of gout supervenes the uric acid has almost completely disappeared from the urine, and it is only at the period of acme of the attack that uric acid is eliminated in excessive quantity.

When the tophus is once formed, it will not increase in size. The contrary was believed on account of the inflammatory states of the tissues which surround the urate deposits.

The hypodermatic injections of uric acid are extremely painful, and the result is exactly the same whether we use for these injections, instead of uric acid, the acid phosphate of soda; this is what occurs in an individual in normal health. If these same injections are made in gouty patients, no pain will be experienced; this is an excellent process for differential diagnosis. This result is easily explained by the following experiment: If before making the subcutaneous injections of acid phosphate of sodium, we render the organism alkaline we shall experience a great deal of pain, which one would not feel in the normal state. By rendering, on the other hand, the humors of the organism acid, by taking internally a small quantity of hydrochloric acid, the injections of acid phosphate are absolutely innocuous. The alkaline state of the liquids of the whole organism is, therefore, the cause of the pain described above.

The treatment requires the compliance with an important indication, namely, to keep the uric acid in a powerful state of diffusion. For this purpose a careful diet is necessary. He thought that we make a mistake in suppressing too rapidly the dark meats; for the only

serious danger from gout is the gouty cachexia, which comes early if the patient is not sustained; we must, on the contrary, give as much albumin as we can, for the suppression of meat is against the chemical indication. He thought meat is much to be feared, his experiments having shown that the uric acid is derived almost exclusively from the hydrocarbons. He does not allow milk under any condition. As a general rule, hydrocarbons must be given to gouty patients in the smallest proportion possible.

Alcohol and wine, diminishing the diffusibility of uric acid, must be strongly forbidden. When a gouty attack comes on, the patient must not be allowed to remain too long in bed, for in doing so he postpones and prolongs the disappearance of the attack; he must take out-door exercise.

As to the medical treatment, he knew of but one, the alkalinization of the blood to the extremest degree. To bring on this condition we must act with a great deal of care and begin the treatment by very small quantities of alkalies. He has seen patients who, under the influence of a large quantity of alkaline water taken at the beginning of the treatment, have had the severest attack of gout possible; we must, for this reason, begin with very small doses and progressively increase our medication.

Alkaline baths are also to be recommended. Against the articular pains he gives 30 or 45 grammes a day of salicylic acid; this will promptly relieve the pain. Extremely diluted hydrochloric acid will do better than the salicylic acid.

M. FÜRBRINGER, of Berlin, then read a paper on

VIRILE STERILITY.

A great distinction must be made between impotentia generandi and impotentia coeundi: the first consists in the sterility due to aspermia—that is, the absence of spermatozoa in the seminal fluid, when there are no other essential alterations in the accomplishment of the sexual connection.

In this paper he considered only the impotentia coeundi, which Rockwell and Hammond have studied under the name of sexual neurasthenia, and he did not consider the different organic causes (such as those due to syphilis, gonorrhœa, traumatism, etc., which bring on impotentia coeundi on account of the pain or incurvation or other alteration having an anatomical basis).

In nervous impotency, the insufficient erection is the principal cause of impossibility of coitus. Sexual impotency of purely physical origin, without any appreciable neurasthentic phenomenon, is much the less frequent; impotentia coeundi coexists nearly always with indications of irritative feebleness, and can, like spermatorrhœa, which usually accompanies it, constitute in most cases the only symptom of a neurasthenia. While he has collected one hundred cases of impotentia generandi he has two hundred cases of impotentia coeundi, of purely nervous origin, which nearly all have occurred in his private practice. Out of 15,000 patients whom he has treated at the hospital he has met only two cases of this functional trouble. He does not think it is more exceptional in the working classes, and he attributes our lack of knowledge in those cases to the carelessness with which the sexual act is accomplished.

The extreme ages at which he has met this affection are eighteen and fifty-two years; 50 per cent. of his patients were in their fortieth year. His statistics indicate a greater frequency in business men, officers, and, above all, physicians; it is not rare in theologians, and, lastly, professors are at the bottom of his list. As to the early histories of these cases, he has found that 28 per cent. were due to onanism; 38 per cent. to gonorrhœa; onanism and gonorrhœa combined, 13 per cent.; excess of natural coitus, 10 per cent.; hereditary irritative weakness, 11 per cent. It is to be remarked that spermatorrhœa and the voluntary suspension from coitus do not give origin to a special form of the affection, and that it is the sexual excesses and not their accomplishment against the laws of nature which have an influence in this respect. In all these patients the general state varies with the more or less prominence of the phases of this nervous impotency, the associated symptoms of which consist of headaches, disturbances of vision and speech, in phenomena of nervous dyspepsia, in more or less marked cardiac disorders—in a word, to spinal irritation.

The analysis of the four distinct phenomena which occur in the sexual act—erectio, libido sexualis, ejaculatio, orgasmus—permit us to distinguish four principal forms of impotentia coeundi.

In the first, which is the most frequent, there exists, independently from insufficiency of erection, a more or less pronounced weakness of the desire, of the ejaculation, of the orgasmus. In this form, which affects at the same time the four parts of the sexual act, we must take into consideration the female coldness which is quite common in Germany; in certain less frequent cases, it is less an impotentia virilis than a impudentia muliebris.

The second form, characterized by nearly the same symptoms, differing from the first only by the exaggeration of the sexual desire, is accompanied by frontal headache, and requires a bad prognosis.

The third form, characterized by a precocity of the ejaculation, constitutes an insensible transition between impotentia coeundi and diurnal pollutions.

In the last form the desire and ejaculation exist, but the erection is abnormal on account of mixed cerebral activity or professional preoccupations.

To establish the diagnosis of impotentia coeundi, we must carefully examine the urine for sugar or albumin, and look if we can find any signs of locomotor ataxia or cerebral tumor, such as syphilitic gummata.

As to the prognosis, it depends on the degree of neurasthenia. His statistics have given him one-third of cures and one-third of ameliorations. We must hold ourselves on the reserve for the local treatment, which is useless so long as there is no inflammation of the urethra, and which exerts even, in a moral point of view, a bad influence, in cases where the impotency is of a purely nervous character.

To hygienic conditions, above all, must therapeutics owe its beneficial influence; we must, according to the case, oblige our patients to take physical and intellectual rest; forbid any sexual intercourse; recommend travelling; and in many cases, a stay at a special place for the treatment of the neurasthenia.

Hydrotherapy and massage can in those cases render good service; but the results obtained by these methods are far from being satisfactory. As to the question of marriage, this should be left to the appreciation of the physician for each special case.

DR. KLEMPERER, of Berlin, read a paper on

DILATATION OF THE STOMACH AND ITS TREATMENT.

In Dr. Leyden's clinic he had observed seventeen cases of dilatation of the stomach with narrowing of the pyloric orifice. In eight of these the quantity of hydrochloric acid in the gastric juice was below normal; in seven it was greater than normal; and in two it was equal to normal. He had studied with great care the relations existing between dilatation of the stomach and gastric hyperacidity, and he had observed twenty-one cases of hyperhydrochloridity, which he divided into two sections:

1. In twelve cases of hyperacidity with preservation of the motor functions of the stomach the patient presented all the symptoms encountered in nervous dyspepsia; in these cases cure has always been very difficult. But in these patients, notwithstanding the hyperacidity, the stomach did not undergo dilatation, and he thought that these cases ought to be classified as secretory neuroses.

2. In this section he placed cases of hyperacidity with weakening of the motor power. He placed in this group those cases in which the hyperacidity and motor weakness were due to an irritation resulting from a too copious feeding. In this group he also placed four cases characterized by a hypersecretion, and a case of hyperacidity accompanied by a well-marked diminution of the saccharifying power of the saliva upon starch. In several cases the motor weakness of the stomach was the first to appear, so that the hyperacidity can be due to the great length of time during which food is kept in the stomach. In this class belongs the dyspepsia of phthisis.

As a cause for the weakening of the gastric motor power a torpid state of the vagus nerve has been suspected: this theory appeared to him much more acceptable, since he has had the opportunity to observe gastric dilatation occurring simultaneously with palpitation of the heart; when this weakening of the motor power is prolonged the state of hyperacidity may be replaced by a lack of acidity.

He thought that a weakness of the gastric motor power is very often the sole primary cause of gastric dilatation. This state may be primary or secondary, and results from the irritation produced by undigestible food; but the hyperacidity of the gastric juice cannot be considered as a cause of ectasy. It is not always easy to treat such cases; but it would be contrary to accepted opinion to assert that, when a dilatation is once produced, it will not disappear again. He had had the opportunity to observe an enormous dilatation of the stomach, which came on in four weeks' time, as a result of poisoning by an acid. After a resection of the pyloric end of the stomach, the stomach returned to its primitive form, as he had been able to verify by an autopsy of the patient, who, being phthisical, died a few months later from tuberculous disease. In cases, however, in which the dilatation comes on gradually and takes a chronic form, the return to the normal condition is no longer possible, but a well-understood treatment can restore the motor power.

His treatment of these cases is as follows: Washing out the stomach in the evening with a small quantity of water, using an aspirating apparatus, and carefully regulating the diet. Many authors recommend a meat diet, thinking that the stomach is able to digest meat rapidly, but as a result of his researches he has found that in dilated stomachs absorption is very much restricted. It is necessary, however, that the intestine should receive as much food as is requisite for the preservation of the tissues, and for this purpose, 18 ounces of fat and 3¼ ounces of hydrocarbon are to be recommended for one day. The fatty matter must be given in the form of cream and the hydrocarbon as glucose. Bread can be given as part of the alimentation of such patients, and a certain quantity of alcohol would also be of benefit. In addition to the above, electrical treatment and massage are recommended.

PROF. EBSTEIN, of Göttingen, read a paper on

EXPERIMENTAL FORMATION OF RENAL CALCULI.

He had made with M. Nicolaier experiments on dogs and rabbits, and they were able to produce in these animals, by introducing oxamide in their food, renal calculi, the largest of which were localized in the pelvis of the kidney, while the gravel and small grains of sand could be found in any part of the urinary apparatus. The ingested oxamide was white, while the renal concretions were of a grayish-yellow; the largest of them presented on their surface asperities and elevations. The calculi were very hard, and after attrition they observed on the worn surface concentric rings or portions of rings, between which they could distinguish concentric layers having a radiated striation. These concretions are constituted by oxamide and by an organic stratum, giving all the reactions of albuminoid substances. Treating these calculi by means of hot water at 176° to 194° F., the oxamide is dissolved and brings into view the organic stratum, sections of which offer a similar disposition to the worn surfaces, except that the suppression of these radiations reveals the relation which exists between these stellate fibres and the existence of oxamide.

DR. HANAU, of Zurich, read a paper on

THE ARTIFICIAL INOCULATION OF CANCER.

The experiments which have been undertaken up to the present in regard to the transplantation of cancer, have given in some cases absolutely negative results, in others inflammatory alterations of a simple form; sometimes a true clinical tumor has been observed, the carcinomatous nature of which, however, is questionable. Two experiments only—one of Nowinsky, the other of Wehr—can be considered as having been successful, and yet no histological examination has been made.

In November, 1888, Hanau transplanted into the tunica vaginalis of the testicle of two rats, materials derived from non-ulcerated glands, but which were already involved by metastasis from a cancroid of the vulva which had spontaneously appeared in a female. One of those rats died seven weeks later; the post-mortem showed the presence of nodular cancer occupying the whole peritoneum; for we know that in the rat the inguinal canal is not obliterated.

In a second rat, sacrificed at the end of the eighth week, the tail of the epididymis was the seat of a cancerous nodule of about the size of a pea, and the gubernaculum testis presented a nodule about one-thirtieth of an inch in diameter.

On histological examination, the identity between the structure of the tumors found in those animals and that of the cancerous material used was most striking. Both

cases were of squamous epithelioma. The absence of any primary cutaneous cancer in those animals previous to his experiment, and the localization of the cancroid on the surface of the peritoneum or tunica vaginalis, allow him to establish a certain relation between the fact of transplantation and the production of the cancer. The failure of former experiments must be attributed to bad manipulation.

From the second dead rat, cancerous material was obtained and transplanted to a third animal, in which the existence of a tumor can already be distinguished.

EXTIRPATION OF THE LARYNX FOR CANCER.

DR. ROSER, of Hanau, presented a woman, forty-five years of age, upon whom he had made a total extirpation of the larynx. The patient consulted him, for the first time, four years ago, when she presented a squamous epithelioma of the larynx.

Supra-sternal tracheotomy was first performed, which enabled the patient to go about for these four years, but six weeks ago, the patient having become suddenly worse, he decided to extirpate the vocal organ. The operation was a success, and the patient was presented to the members of the Congress. She is now being nourished with the aid of an œsophageal tube.

PROF. VON ZIEMSSEN then read a paper

ON CARDIAC CONTRACTIONS.

He has studied through the medium of tracings the successive phases of a cardiac cycle. Between the moment of complete rest in the state of diastole and the first cardiac sound, contraction is represented by a rapidly rising curve, soon followed by another rising curve nearly straight, but a little longer and approximating more to the horizontal line. Between the first and second sounds the cardiac tracing presents an almost vertical ascending line, terminated by a rounded hook, the summit of which corresponds to the phase of most active contraction; then the curve comes down again as suddenly to a level a little higher than the one corresponding to the beginning of the second phase; the curve then rises again at two different moments, but very feebly; and of these two summits, much lower than the first and corresponding to a normal dicrotism, the last one is the least elevated and corresponds to the second sound. Next the curve comes down somewhat less suddenly to the inferior level of the tracing, the total of which represents the whole cardiac cycle.

The experiments made with alcohol on the one side and digitalis on the other, show that, in the second case, the time elapsing between the phases of complete diastole and the first valvular sound is about the only one at all influenced; it is shortened in the first case, elongated in the second. These phases are in the proportion of 0.18 to 0.46, the normal phase being 0.25. The other parts of these tracings do not vary from the normal type.

DR. KREHL, of LEIPZIG, then spoke of the

VARIATIONS OF PRESSURE IN THE CARDIAC AND ARTERIAL CAVITIES.

At the Physiological Institute of Leipzig he made, with Prof. Frey, experiments on the dog by means of sounds introduced into the left ventricle and aorta, and of a rubber manometer which furnished a graphic variation of the blood-pressure in the left heart and aorta. In the heart the pressure rises rapidly, to come down to zero after having reached its maximum point. To the period of negative pressure succeeds immediately, after each cardiac beat, a positive pressure or a moment of rest. The absolute increase in the pressure rises in direct proportion to the degree of fulness of the heart, as well as in proportion to the amount of resistance. The closure of the valves is not marked very plainly on the tracing of the ventricular pressure. The elevation of pressure is more retarded at the base of the aorta than in the ventricle; the pressure rises as long as the outflow of the orifices is greater than the quantity which passes through the aortic opening. The aortic valves close as soon as the aortic pressure is superior to the intra-ventricular pressure; then we note a second maximum value of pressure, which constitutes the dicrotic character of the blood column, which is nearly always constant.

The dicrotic undulation is produced before the closure of the aortic valves; so that the production of this dicrotic undulation cannot be in direct relation to the closure of the aortic valves, and cannot be attributed to it. In comparing the variation of pressure in two different parts of the aorta, we find that this dicrotic undulation is always nearer to the heart. The dicrotic undulation being, then, an undulation, which from the periphery goes toward the centre, we understand that the greater the pressure the more will this tracing approximate to the principal summit of the tracing, for the rapidity of propagation of the undulation in the vascular channels rises in proportion to the tension of the walls. By means of stimulating the pneumogastric, one can produce aortic pulsations without dicrotism; this is what we observe when the reflected undulation comes back to the base of the heart, when the heart has stopped from emptying itself. If the pressure is not of an abnormal height, this phenomenon can still take place when, under the influence of the irritation of the pneumogastric, the graphic segment corresponding to the positive pressure of the ventricle finds itself prolonged.

DR. FR. MULLER, of Berlin, then read a communication

ON NUTRITIVE CHANGES IN CANCEROUS PATIENTS.

A careful examination of numerous experiments he had made to study the state of nutrition in persons suffering from cancer, has shown such a diminution in the excretion of urea, that one might have thought of the existence of renal complications. Toward the end of the disease, the comatose stage, in which many patients die, seems to be due to a real intoxication resulting from the accumulation of the organic waste material, which shows itself in the urine by the almost entire absence of urea. This fact might help us to explain the comatose state which often accompanies the death of the cancerous patient; this coma is a uræmic coma, and yet is remarkable on account of the absence of all renal lesions.

PROF. LEYDEN, of Berlin, stated that the researches relating to the nutrition of patients suffering from carcinoma or malignant tumors are of considerable practical importance. The works of Klemperer, Müller, and Freund allow us to find out the ways by which cachexia brings on death, and to discover at the same time the way in which rational therapeutics will be able to neutralize these destructive processes. From their researches

we shall obtain principles applicable to an internal medication appropriate to cancerous patients; without going so far as to pretend to cure cancer, we can declare, according to these researches, that the attempts of medicine to prolong the life of our patient will no more be restricted to the chances of purely empirical means, and that we possess to-day a new direction toward which we are to conduct therapeutical experiments. The use of the tube in many cancerous patients has enabled us to prolong the life and obtain a rapid increase in the bodily weight, favoring the organic nutrition. So long as nutrition will not be interfered with, either by the fact of a pyloric or intestinal stenosis, or so long as the intensity of the suffering does not go beyond human endurance, we shall be able to rely upon the favorable results of a nutritive course based upon pathologico-physiological researches, to postpone the period of cachectization and to prolong life.

DR. FREUND, of Vienna, had also studied from a chemical point of view the relations which exist between the different groups of albuminoid, mucous, fatty, hydrocarbonaceous, aqueous, and saline substances, in normal tissues as well as in those of malignant character. Out of sixty cases which he had studied in a period of three years, he had always found that those tissues of neoformation contain 50 per cent. less albumin than the normal tissues, and that carcinoma presented, with a normal proportion of fat, twenty or thirty times more hydrocarbons, while sarcoma presented about a normal proportion of fat and hydrocarbons, but an average of about 5 per cent. of the weight of the dry residue was peptone. On the other hand, the blood of cancerous patients, even at the beginning of the disease and outside of all cachexia, presented a proportion of sugar and hydrocarbons about double or three times the normal amount, while the blood of sarcoma did not contain any hydrocarbons in excess, but furnished an exaggerated proportion of peptone (0.2 per cent.). In such proportions both these substances must be considered as abnormal in the blood, their presence being attributable to a diminution of the oxidizing power of the tissues in regard to a special group of substances. It is interesting to note that the substances which are found in exaggerated proportion in the blood are precisely those which constitute an important element of each of these products of neoformation.

DR. FINKLER, of Bonn, the read a paper on

PNEUMONIA WITH STREPTOCOCCI.

He had observed, some time ago, a short epidemic of pneumonia, which suddenly appeared in the suburbs of Bonn; it was a pneumonia of lobular form, becoming lobar by propagation, and presenting the form known as erysipelatous or migratory pneumonia. The bacteriological researches, before and after death, have always invariably shown the presence of the same microörganism, the streptococcus pyogenes. The lung, however, did not suppurate, excepting a few small miliary abscesses, occupying in one case only the periphery of the involved lobule. These pneumonias occurring spontaneously in persons having not had before an infectious disease, having long ago passed the age of eruptive fevers, or, at least, having not had any before the pneumonia, proves that the streptococcus, the function of which is so important in the pathogeny of secondary infections, can primarily, and by its sole existence, determine pulmonary lesions the clinical and anatomo-pathological aspect of which leave no doubt as to its nature. This was the type of lobular, pseudo-lobar, or migratory pneumonia which he had observed.

DR. VON BASCH, of Vienna, then read a paper

ON CARDIAC DYSPNŒA.

His last experiments, which had been made, he said, with MM. Bettelheim, Grossmann, and Schronburg, confirm the theory of cardiac dyspnœa which he had framed some time ago. It is characterized by three phenomena: First, the dyspnœic type of respiration; secondly, the diminution, in the point of view of hematosis, of the respiration; thirdly, an increase in volume of the lungs. The last two phenomena are verified by means of percussion or spirometry. In cardiac dyspnœa, in the dog as well as in man, the increase in volume of the lung is due to insufficiency of the cardiac activity and to a consecutive repletion of the pulmonary bloodvessels; and, consequently, differs from the dyspnœa resulting from insufficiency of the right ventricle and of the consecutive anæmia of the lung, as in this last case the volume of the lung is reduced. Repeated experiments on dogs, in which the vagus had been previously cut, have established the fact that the increase or diminution in size of the lung is not due to peripheral irritation of the pneumogastric. On the other hand, the study of the thoracic pressure has demonstrated that the intra-thoracic pressure increases in the dyspnœa dependent on insufficiency of the left ventricle, and that it is in direct relation to the increase in volume of the lung, which is, consequently, passive.

The intra-thoracic pressure is, on the contrary, diminished in the dyspnœa due to insufficiency of the right ventricle, and is in relation with a diminution of volume of the thorax, which so constitutes an active phenomenon in cases of pulmonary anæmia. In the first case, the increase in volume of the lungs is due to a state of "pulmonary erection" which he described two years ago; while, in the second case, the diminution in the spirometric value results from the state of rigidity of the lungs, the existence of which can be discoverable on curarized animals.

As to the muscular effort, it brings on cardiac dyspnœa only after having produced a state of hyperpnœa; then an insufficiency of the left ventricle, which is accompanied by a state of pulmonary rigidity from which results a difficulty of ventilation.

In cases of cardiac asthma, dyspnœa also occurs when insufficiency of the left ventricle is established, and the prodromic dyspnœa must be attributed to an increase in volume of the lung, which shows itself by a state of tumefaction and rigidity of this organ.

DR. LEO, of Berlin, then read a paper

ON MOLECULAR CHANGES IN DIABETES MELLITUS.

He had made a series of researches on the nutritive changes in diabetic patients. These experiments have demonstrated that the quantity of oxygen which is absorbed and the quantity of carbonic acid which is eliminated are not identical in diabetic patients with the quantities of these same gases which are absorbed or eliminated by normal individuals. The contradictory results obtained by Pettenkofer and Voit, are due to the

fact that they failed to take into consideration the muscular effort, which is much less pronounced in diabetic, run-down patients than in healthy individuals. As to Ebstein's theory of the *rôle* of carbonic acid in diabetes, he did not think it sufficient. On giving carbonic acid inhalations to several diabetic patients, he noticed that the elimination of the sugar was not interfered with.

PROF. M. EBSTEIN, of Gottingen, said that if a diminution of carbonic acid proves that the tissues form less carbonic acid, the normal or increased elimination of the same acid does not imply that the production of carbonic acid in the tissues is not normal; it might even be diminished. On the other hand, the increase of the carbonic acid in the tissues, by inhalation of a large quantity of this acid, could not be compared to the action produced by the accumulation in the tissues of carbonic acid in a nascent state. The experiments of Leo do not demonstrate the hypothesis which he defends; for either the formed sugar is directly rejected, or else it deposits itself under the form of glycogen amidst the tissues; if this second supposition be a correct one, it would prove that when we increase the hydrocarbons of the organism, the saccharifying ferment has lost all power.

DR. DEHIO, of Dorpat, then spoke

ON THE PRODUCTION OF THE VESICULAR MURMUR.

The vesicular murmur, according to Betzold and other authors, was nothing but the tracheal or glottic sound, propagated throughout the pulmonary parenchyma. In laryngeal stenosis, however, even accompanied by great laryngeal noise, the vesicular murmur can be well heard. His starting-point having been that the vesicular murmur is not a propagated sound from the larynx, he made a series of experiments on artificially prepared lungs. The trachea was replaced by a large rubber tube and the lung inflated while he auscultated. Notwithstanding the absence of the trachea and the impossibility of any sonorous transmission, one hears very distinctly in prepared lungs the characteristic sound known as vesicular murmur. This vesicular murmur is, then, a sound having its origin in the pulmonary alveolus itself; and can be due only to the movement communicated by the inspired air column to the quantity of air which normally remains in the lung—the residual air.

(*To be concluded.*)

NEWS ITEMS.

The Third Annual Meeting of the American Association of Genito-Urinary Surgeons will be held at the Aquidneck House, Newport, on Tuesday and Wednesday next, May 21st and 22d, under the presidency of Dr. R. W. Taylor, of New York. The following papers are announced on the programme:

"The Question of the Radical Cure of Deep Urethral Stricture," by E. L. Keyes, M.D., of New York.

"The Essential Factor in the Etiology of Stricture and Its Bearing on the Question of Radical Cure, by John P. Bryson, M.D., of St. Louis.

"Cases of Nephrectomy and Nephrotomy," by R. B. Nall, M.D., of Memphis.

"A Contribution to Renal Surgery," by Nicholas Senn, M.D., of Chicago.

"Primary Syphilitic Lesions at the Meatus Urinarius," by Francis B. Greenough, M.D., of Boston.

"Induration of Venereal Sores not always an Indication that Constitutional Syphilis will Follow," by Edwin C. Burnett, M.D., of St. Louis.

"Malignant Tumors of Inguinal Ganglia Secondary to Epithelioma of the Penis," by Robert W. Taylor, M.D., of New York.

"The Relation of the Prostate to Chronic Urethral Discharge," by J. William White, M.D., of Philadelphia.

"Report of Three Cases of Chronic Cystitis of the Neck, resulting in the Formation of Hard, Fibrous Rings at the Site of the Sphincter Vesicæ; with Remarks," by John P. Bryson, M.D., of St. Louis.

"A Case of Melanotic Sarcoma of the Vulva," by Robert W. Taylor, M.D., of New York.

"Reflex Irritations from Stricture of the Urethra in the Female," by Fessenden N. Otis, M.D., of New York.

"Treatment of Gonorrhœa and Gonorrhœal Cystitis," by Edward R. Palmer, M.D., of Louisville.

"Cases," by Alexander W. Stein, M.D., of New York.

"Cases of Suprapubic Cystotomy," by L. Bolton Bangs, M.D., of New York.

"A Case of Scirrhus of the Bladder," by Arthur T. Cabot, M.D., of Boston.

"Hereditary Syphilitic Transmission Through Two Generations," by E. E. King, M.D., of Toronto.

"A Case of Poisoning by Chromic Acid, following its Application to Condylomata Acuminata," by J. William White, M.D., of Philadelphia.

"An Unusual Form of Vesical Calculus," by George Chismore, M.D., of San Francisco.

German Surgical Congress.—The Congress of German Surgeons, which held its eighteenth meeting this year, brought together nearly all the well-known workers of Germany, besides many from abroad. Among the latter a particularly hearty welcome was given to Billroth, of Vienna, who is an honorary member of the Society, but who has been absent from its meetings for several years owing to ill health. Professor Horsley, whose labors have been followed with equal interest by the physicians and surgeons of Germany, was the object of much attention.

The Congress was opened on April 24th with an address by the president, Professor von Bergmann. Referring to the sad April days of last year, which witnessed the sore struggle of the Emperor Frederick with his terrible disease, the speaker expressed a hope that, by steadfast adherence to what has once for all been recognized as true, there might some day spring from the seed of sorrow and suffering a blessed fruit for all, whether high or low, who trust to medical art.

It is impossible to furnish even a concise review of the abundant material presented at the sittings. The demonstrations of Professor Horsley (which were given in Dr. Dubois-Reymond's Physiological Institute, under the presidency of that gentleman) filled the theatre, and were received with loud applause. The same was the case with respect to an address by the Japanese physician, Dr. Kitassato, who, under the direction of Privy Councillor Robert Koch, has succeeded in obtaining pure cultures of the bacilli of tetanus.

The Congress held seven sittings under the presidency of Dr. von Bergmann. The presidentship for next year was on the afternoon of the third day again conferred on Professor von Bergmann. The close of the Congress

took place on the afternoon of April 27th.—*The British Medical Journal*, May 4, 1888.

Mind Cure only extreme Homœopathy.—The homœopathic doctrine of increasing potency with increasing attenuation has been ingeniously applied by the professors of the mind cure to their science, and one of them explains the working of their treatment as follows: "I have found, by actual experiment, that as the drug is attenuated its power is increased, until, when the drug is all gone and there is only mind, its greatest efficacy is reached."—*North-Western Lancet.*

A Powder for Sore Feet.—From Germany comes a bit of valuable information for policemen, carriers, collectors, and others, whose occupation requires them to be on their feet a great deal. No matter how comfortable or roomy their shoes, such persons are almost always more or less troubled with chafed, sore, or blistered feet. The difficulty may be readily overcome by the use of a powder, which is a necessary part of the German army equipment. It is known there as "Fussstreupulver," and consists of three parts of salicylic acid, ten parts starch, and eighty-seven parts pulverized soapstone. It keeps the feet dry, quickly heals sore spots, and prevents chafing. A powder of pulverized soapstone is also good.—*American Druggist*, April, 1889.

Corrigendum.

We are requested to state that the honorary degree of Doctor of Medicine conferred upon Dr. J. S. Billings came from the University at Munich, and not from that of Vienna.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MAY 7 TO MAY 13, 1889.

By direction of the Acting Secretary of War, a Board of Medical Officers, to consist of: ANTHONY HEGER, *Lieutenant-Colonel and Surgeon;* F. C. AINSWORTH, *Captain and Assistant Surgeon;* and JOHN O. SKINNER, *Captain and Assistant Surgeon*, will assemble at the U. S. Military Academy, West Point, New York, on June 1, 1889, to examine into the physical qualifications of candidates for admission and members of the graduating class.—Par. 9, *S. O. 108, A. G. O.*, May 10, 1889.

By direction of the Acting Secretary of War, F. C. AINSWORTH, *Captain and Assistant Surgeon*, will proceed to Albany, New York, on business connected with the Medical Department.—Par. 7, *S. O. 105, A. G. O.*, May 7, 1889.

APPEL, D. M., *Captain and Assistant Surgeon.*—Relieved from duty at Fort Sill, Indian Territory, and ordered to Fort Bliss, Texas.—Par. 25, *S. O. 104, A. G. O., Washington*, May 6, 1889.

COWDREY, S. G., *Captain and Assistant Surgeon.*—Relieved from duty at Fort Bliss, Texas, and ordered to Fort Marcy, New Mexico Territory.—Par. 25, *S. O. 104, A. G. O., Washington*, May 6, 1889.

FINLEY, JAMES A., *Captain and Assistant Surgeon.*—Relieved from duty at Fort Assinniboine, Montana Territory, and ordered to Fort Totten, Dakota.—Par. 25, *S. O. 104, A. G. O., Washington*, May 6, 1889.

DE LOFFNE, AUG. A., *Captain and Assistant Surgeon.*—Relieved from duty at Fort Totten, Dakota, and ordered to Columbus Barracks, Ohio.—Par. 25, *S. O. 104, A. G. O., Washington*, May 6, 1889.

TAYLOR, B. D., *Captain and Assistant Surgeon.*—Relieved from duty at Columbus Barracks, Ohio, and ordered to Fort Sill, Indian Territory.—Par. 25, *S. O. 104, A. G. O., Washington*, May 6, 1889.

By direction of the Secretary of War, PAUL R. BROWN, *Captain and Assistant Surgeon*, is relieved from further duty in the Department of the Platte, and will proceed to Fort Thomas, Arizona Territory, and report in person to the commanding officer of that post for duty, and by letter to the commanding officer Department of Arizona.—Par. 10, *S. O. 105, A. G. O.*, May 7, 1889.

By direction of the Acting Secretary of War, the ordinary leave of absence granted WILLIAM B DAVIS, *Captain and Assistant Surgeon*, in Special Orders No. 232, October 5, 1888, from this office, is extended six months, on surgeon's certificate of disability.—Par. 20, *S. O. 108, A. G. O.*, May 10, 1889.

By direction of the Acting Secretary of War, WILLIAM P. KENDALL, *First Lieutenant and Assistant Surgeon*, will be relieved from duty in the Department of California, after he shall have complied with the requirements of Par. 2, S. O. 29, April 24, 1889, from these headquarters, and will then proceed to Fort D. A. Russell, Wyoming Territory, for duty at that station.—Par. 28, *S. O. 104, A. G. O.*, May 6, 1889.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY, FOR THE TWO WEEKS ENDING MAY 11, 1889.

BEARDSLEY, GROVE S., *Medical Inspector.*—Detached from the "Brooklyn," proceed home, and wait orders.

LOVERING, P. A., *Passed Assistant Surgeon.*—Detached from the "Brooklyn," proceed home, and wait orders.

NORTON, OLIVER D., *Assistant Surgeon.*—Detached from the "Brooklyn," proceed home, and wait orders.

HAWKE, J. A., *Surgeon.*—Detached from the "Essex," proceed home, and wait orders.

STOKES, C. F., *Assistant Surgeon.*—Detached from the "Minnesota," and ordered to the "Iroquois."

BRANSFORD, JOHN F., *Surgeon.*—Orders to the "Iroquois" revoked. Resignation accepted, to take effect May 4, 1890, with leave of absence granted to that date, with permission to leave the United States.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE-HOSPITAL SERVICE, FOR THE FOUR WEEKS ENDING MAY 11, 1889.

PURVIANCE, GEORGE, *Surgeon.*—Detailed as Chairman of the Board for the Physical Examination of Candidates for Appointment as Cadets, Revenue Marine Service, May 3, 1889. Detailed as Chairman of Board for the Physical Examination of Officers, Revenue Marine Service, May 11, 1889.

IRWIN, FAIRFAX, *Surgeon.*—To proceed to Bath, Wicasset, Rockland, Belfast, Bangor, Ellsworth, Machias, and Eastport, Maine, as Inspector, April 22, 1889.

MEAD, F. W., *Passed Assistant Surgeon.*—Detailed as Recorder of the Board for the Physical Examination of Candidates for Appointment as Cadets, Revenue Marine Service, May 3, 1889. Detailed as Recorder of the Board for the Physical Examination of Officers, Revenue Marine Service, May 11, 1889.

WHEELER, W. A., *Passed Assistant Surgeon.*—Granted leave of absence for thirty days, April 16, 1889.

BRATTON, W. D., *Passed Assistant Surgeon.*—Relieved from duty at San Francisco, California, to assume charge of the Service at Portland, Oregon, May 8, 1889.

MAGRUDER, G. M., *Assistant Surgeon.*—To proceed to Baltimore, Maryland, for duty, May 8, 1889.

PERRY, T. B., *Assistant Surgeon.*—When relieved at Portland, Oregon, to proceed to San Francisco, California, and await orders. May 8, 1889. To report to the commanding officer Revenue Steamer "Rush," for special duty, May 11, 1889.

CONDICT, A. W., *Assistant Surgeon.*—When relieved from duty at Boston, Massachusetts, to await orders, May 8, 1889. To report to the commanding officer Revenue Steamer "Chase," for special duty, May 11, 1889.

HUSSEY, S. H., *Assistant Surgeon.*—When relieved from duty at Baltimore, Maryland, to proceed to Boston, Massachusetts, for duty, May 8, 1889.

GEDDINGS, H. D., *Assistant Surgeon.*—To proceed to Baltimore, Maryland, for temporary duty, May 8, 1889.

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